The Builder.

Vol. XIII.—No. 652.

SPENSER, were he writing now, could not describe the Londoners' river as "The silver-streaming Thames;" nor could Denham call it,—

"Though deep, yet *clear*."

Meetings of inhabitants, deputations to Board of Health, Lord Mayor's well-meant inquiries, learned professor's card-dropping, all concur to show that public attention is to some extent directed to the evils resulting from the present appropriation of the drainage of London, and consequent condition of the Thames. Year after year the once translucent and beautiful river has become more and more impure: in fact, it has been converted into a gigantic and foul ditch, into which, besides that of London, the drainage of many places is passed. For example, as this fact should not be forgotten, Cirencester, with a population of 6,096; Cricklade, with 35,505; Fairford, 1,859; Farringdon, 3,122; Lechlade, 1,373; Oxford, 27,843; Wallingford, 2,819; Thame, 2,869; Reading, 21,456; Henley, 3,733; High Wycombe, 7,179; Amersham, 2,093; Maidenhead, 3,607; Guildford, 6,740; Windsor, 9,596; Uxbridge, 3,236; Watford, 3,800; Rickmansworth, 4,851; Staines, 2,430; Chertsey, 2,743; Kingston, with 6,279 persons; and many other places, saying nothing of the 8,000 persons, who, according to the last returns, sleep on the river; all contribute to the result we are now deploring. At Kingston, by the way, to which point some of the Water Companies have resorted for their supply, operations are going on to render it a most unfit spot for such a purpose. The effect of impure water in producing disease, is surely too certain to need further proof at the cost of life.

The population of the London district alone in 1851 was nearly two and a half millions, thus divided:—

	Males.	Females.
Middlesex	814,594 —	931,007
Surrey	225,617 —	256,818
Kent	66,347 —	67,853
	1,106,558 —	1,255,678
		1,106,558
Total		2,362,236

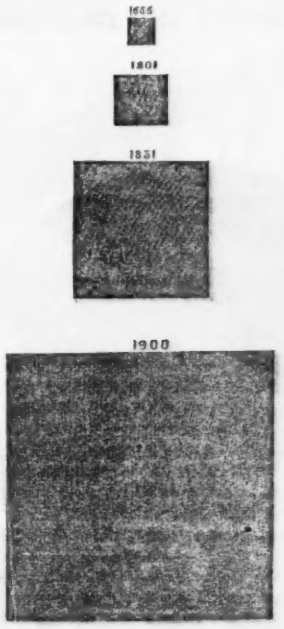
In considering this most important subject, it is right to remember that in 1666 the population of London was about 400,000; in 1801, 958,863; and in 1851, 2,362,236. In 1900 we may expect a population of nearly 5,000,000.

Our diagrams will aid through the eye in giving a clear idea of this progressive growth.

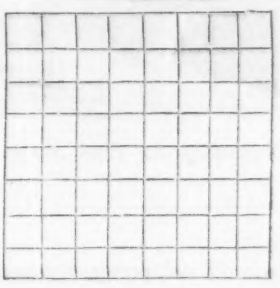
In London, in 1801, there were on an average nearly 394 square yards of land to every person, and 2,784 square yards to every inhabited house. In 1851 there were on an average 160 square yards to every person, and 1,234 square yards to every house. If the same rate of crowding be continued, in 1900 we shall not have so much as 80 square yards for each person, and 600 square yards for every house. The size of the squares in our diagrams will convey an idea of this difference.

These figures ought to convince all of the vast consequence of this subject, and that it is only by meeting the matter with promptness, energy, and skill, that we can hope to escape great loss of life and other calamities.

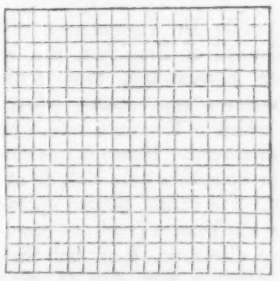
The best mode of healthfully and economically getting rid of the sewage of London and other large towns is one of the greatest and most pressing questions of the day.



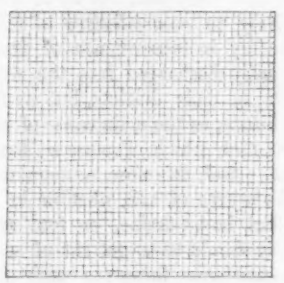
Comparative Population of 1666, 1801, 1851, *and the estimated Population in* 1900.



Density of the Population of London in 1801.



Density of the Population of London in 1851.



Density of the Population of London in 1900.

The Thames is not the only river in course of pollution. The miserable state of the Clyde, amongst others, is beginning to attract the attention of the good people of Glasgow, and it is quite time that it did so: it is described to us as steaming with poisonous exhalations.

It would be not a twice-told but a twenty-times told tale, to urge in these pages the paramount necessity of good drainage. A knowledge of this fact is becoming general; but it is painful to notice how slowly we have moved.

Once upon a time the well-known and disreputable *Fleet* was a crystal stream. In the reign of James I. and even before then, it had become a dangerous nuisance; and since that time wit, sarcasm, and abuse have been tried against it: the strong power of the press has battered against the Fleet for more than a quarter of a century; medical men have shown the evil of living near its banks; and yet this venerable abuse has not at the time we write altogether vanished from the sight. While it was uncovered it served to afford some idea of the cause of the pollution of the Thames to those who might otherwise have been ignorant; for few except the ratcatchers, those who search for lost valuables, and others whose business it is, can be persuaded to venture upon a walk through a London sewer,—to stand, and by the help of lantern light see and hear the waters which pass, for example, through the sewer below Scotland-yard. On the shore of the river there, however, at low-water, or standing on Hungerford-pier, you may see something of what is going on.

We have occasionally loitered on the Gravesend steamboat pier at London-bridge, where hundreds of Londoners, bent on the search for pleasure and fresh air, embark in the close neighbourhood of one of these inky floods. We will take away the canvas screen which usually hides it, and show it as it appeared a few mornings since, the pestiferous flood rolling and roaring, and throwing up a spray whereon the sun marked for an instant a mimic rainbow;—Beauty and Filth!

The river on that day, from Chelsea to the spot in question, differed little in complexion from this, its foul tributary. What with the sewers, the soot, and other defilements, old Father Thames is in a sad pickle. If he were to see himself as he appeared in Queen Elizabeth's days, he would feel most thoroughly ashamed and out of sorts with himself, particularly if he remembered how much his wealth had increased,—the number of his ships and visitors from all parts of the world,—and that, instead of becoming, with his prosperity, a useful and personable gentleman, he had sunk into a dirty, unsightly, and poisonous scrub.

In the reign of Queen Elizabeth, that worthy lady and her fair maids of honour were often gladdened by the clear countenance of Father Thames. The city dames and London prentices were delighted with him. Salmon, then, as may be seen by reference to prints of the period, could be readily captured opposite "*Paul's*." The most cunning fisherman would now fail to catch here anything but slimy eels.

We know a Thames waterman who for upwards of fifty years, "as man and boy," has been well acquainted with the Thames, and who remembers salmon being caught at Blackwall-reach. "That," says he, "is forty years ago, and cannot be done now. What would they say if the whitebait, like the salmon, should desert the old river?"

The city dames and 'prentices of our time begin to look on Father Thames with suspicion and dislike, and many thousands of pent-up Londoners, instead of looking up to him as a blessing, say that such water as he can now supply is a curse instead. Father Thames, however, asks, and with justice, too, "Have I been fairly treated? Has a tythe of the riches and benefits which I have been the means of showering upon others, fallen to my use? Have I, who have been the means of carrying out great improvements, been used with due consideration? No! I, an old and useful servant, have been left in such neglect, and exposed to such defilement, that I am not only becoming disgraceful, but dangerous! Gog and Magog have been painted and beautified, but woe is me!"

We raise our voice against any endeavour which may be made, founded on the injury which is now being done to the river, to stop admission to the sewers even temporarily, and

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Londoners Embarking for Fresh Air at London-bridge.

retain the sewage in cesspools. This remedy would, indeed, be much worse than the disease. Every endeavour should be made immediately, and without stint, to free the river from the pollution to which it is exposed, and if possible to apply productively the fertilizing matter now wasted; but pending this the refuse of our houses must be got away: to stop draining, and revert to the cesspoool system would be an act of madness. A step, however, towards this was attempted last week, at the Court of Sewers, but was negatived by a resolution, declaring that, "This court, while deeply sensible of the necessity for intercepting the sewage from the Thames, and anxious in every way to promote that object, is not, meanwhile, prepared to stay or discourage the connection of house-drainage with public sewers, which would greatly inconvenience the community, endanger the public health, and therefore be highly inexpedient."

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"A variety of plans for constructing works to rid the Thames of its impurities are before the Metropolitan Commissioners of Sewers. These commissioners have in their hands 300,000*l.* to be devoted to this special object. A committee of the court of commissioners resolved that it was expedient to refer these plans to a committee of engineers, but the court

did not act upon their own committee's recommendation. Money, plans—everything, in short, is ready for immediate action. Modify, then, Sir B. Hall's Bill thus—it is but a very trifling modification after all—hand over the plans and money to Her Majesty's Board of Works: let them at once proceed to carry that plan pronounced by a committee of engineers to be the best into execution, availing themselves of course of the successful candidate; and when Sir B. Hall's board is ready to undertake the task, let Her Majesty's Board of Works transfer the whole affair over to Sir B. Hall's board. I am no prophet if the intercepting sewers will not be very near completion by the time Sir B. Hall's board will be ready to accept the transfer."

Without confirming his belief that both money and plans are ready, we are perfectly satisfied as to the necessity of immediately taking the most energetic steps to obtain them. The present condition of the Thames is a disgrace to us as an intelligent people. We waste a fertilizer, and we poison the waters.

THE MODERN HISTORY OF ARCHITECTURE.

In previous papers it has been our endeavour—besides contributing to knowledge of facts—to lead attention to aspects in the history of architecture, whence light may be reflected upon questions in the present condition of the art. If we have succeeded so far, it will have been apparent, that at various epochs, the point had to be solved practically, between the preponderance of *novelty* as an element in art, and the subordination of that, in favour of forms supposed to be *certified* as embodying beauty of effect. The latter aim involved the whole matter of what is called "precedent-rule." Now, the object in all good artistic effort is not *one* of these two, but *two-fold;* and question on the subject never could have presented itself had not one element been unduly exalted, ere the other claimed to supply its place. It is the tendency of all opinions to oscillate between extremes. Men do not take the time to sum up and balance, in the Jeremy Bentham manner, the heads of this side and that;—indeed, it requires a colossal mind to do so. To that we can make no pretension. We merely go on to remark that, whilst it is not in evidence that before the last sixty or seventy years, the question referred to above, was raised except at comparatively long intervals, during the later period it has been revived over and over again. At least, so should we say with the single qualification that may be involved in substituting merely novelty of model for novelty of invention. Thus, from opposite directions, the same general absence of *art* was arrived at. Men forgot that the *use* of a good model was not necessarily the *right* use of it.

It should not be inferred, that all were intentionally copyists. But the result was much the same as if that had been the case. More would have been needed than the catching the spirit of the original—put forth even by recent writers as the end of art, — far more than the production of *fac-simile*. Whether chiefly from the absorption of mind in one of the materials of art—archæology, or from a low state of æsthetics (or whatever name we give to the range of philosophic analysis at this juncture first sensibly needed),—or from positive want of the requisite industry, or artist-feeling,—certain it is that the knowledge that was possessed was turned to no real account. We infer the deficiency of proper zest for *art*, because, where the case is otherwise—efforts will involve the exercise of the creative power which is productive, as essential to the existence, of works of ART. With a true artist-mind, reproduction would be unthought of,—would be even impossible. Many architects of the present century deserve neither unqualified praise, nor the censure which it has been the practice of certain writers to give them. Mediocrity, however, may be a demerit in artists, as in poets.

But, it is the general perception of art that has been out of character with the age: and this has made the mistakes of which architects have been the instruments. To that only can be due the excessive apprehension about taking any step, for which immediate reference could not be quoted from an original. Wherever a feature could be drawn from the works which happened to be in favour, the praise was given to him who was supposed to copy from it. The rest of the building took its chance; and the result was a combination of discordant parts. The tendency, therefore, was to produce what was neither good in point of art, nor accurate in "copyism."

There may be novelty without beauty, and beauty without novelty; but there cannot be that particular effect which gratifies in a work of ART, unless both elements are present; and we believe that the efforts to depreciate precedent, or to inculcate anything that may lead to its despotism,—the neglect of models, or the misuse of them,—are equally erroneous as restricted principles. But, as we have shown—beyond the ordinary agitation of these questions—a further influence sprang up at the new era, opening at the juncture when the old art was "a creed outworn," and when the question was—a new belief, or old? That feature of the time was the modern spirit of research,—the investigation into previous history, and the digging out of the records of former art. There was considerable difference between the spirit referred to, now, and any manifested at previous dates. The old Roman collectors had given their attention to Egyptian and Greek antiquities,—mainly to the latter. The later Italians re-discovered the collections and the works themselves, of their predecessors. But the new era inaugurated was that of general investigation and discovery.

Particulars of travels and researches in Egypt and the East, with investigations such as those in Athens by Wheeler and Spon in 1676, and the drawings of Carrey, made in 1674, as they became known, contributed, with the knowledge of what there was in Rome, to develop such a tendency. The chief *impetus*, however, in the direction alluded to, was produced in the latter part of the reign of Louis XV. in France, or within the first few years of the reign of George III. in England,—the latter reign we may say, commencing in 1760, and the other ending in 1774. Indeed, before 1760, the Greek architecture, as we have shown in a former article, was known to the French; and in England it was commented upon in Sir Wm. Chambers's treatise, published in 1759, though unfavourably to its merits. The publication of Stuart and Revett's work, commenced in 1762 (not in 1752, as by a misprint in the last article), the first edition continuing to appear at intervals till 1816. We should be disposed to ascribe to this work more of an immediate influence on the *study of classical antiquities* than similar influence on architectural *style*. It was after the expiration of the war that many of the chief imitations of Grecian architecture were produced. The copy by Stuart, of the Tower of the Winds, at Shuckburgh, Lord Anson's seat in Staffordshire, and a few other works, are exceptions; but the bulk of the Grecian Doric and Ionic of our country belongs to a much later date. Doubtless, however, Stuart helped to produce that idea of classical simplicity which was ultimately proffered in lieu of thought. His work is remarkable for careful drawings of the marbles, now forming part of the Elgin collection.

In 1772, Sir Wm. Hamilton's collection was purchased for our British Museum. Previous to that time, however, important collections had been formed in England, amongst which may be mentioned that of the Earl of Arundel, in 1634, now at Oxford. The most important English acquisition—except the Elgin marbles—the Townley collection, was due mainly to the researches of Mr. Gavin Hamilton, which commenced in 1770. It was purchased by the nation in 1805, the Elgin marbles not being acquired till 1816. The publication of the Dilettanti Society's "Ionian Antiquities," commenced in 1767,—their other works not appearing till 1815, and later dates.

Let us now look to the influences of this character, and those alluded to in the last article, which were at work in the neighbouring country. In France, attention had been early directed to classical antiquities. It contributed to the production of the Roman character of architecture, noticeable in the time of Louis XV. An edition of Montfaucon's "*L'Antiquité Expliquée,*" in 10 vols. folio, bears date 1719. Winckelmann, to whom the chief importance is due, published his "*Monumenti Inediti*" in 1767. Le Roy's work on the remains in Greece had appeared in 1758. The revolution, of tremendous importance in much that affected the condition of art, in the matter of style simply completed the course to which art had been tending under the monarchy.

The peculiar style of Louis XV. in interiors, and indeed in painting and sculpture, is so marked, and so widely prevalent, that people are apt to omit the requisite consideration of the contemporary tendency. The latter at length resulted, especially in the art of painting, in works totally different in character from that of the lively and graceful cabinet pictures of Watteau,—in works merely cold, academic, classical, and correct. As the history of such changes about this time throws light upon our especial subject, we shall venture to give them some attention. It will be recollected that the capture of the Bastille took place in 1789. Nobility was suppressed in France in the following year: in 1792, the Tuilleries were besieged and plundered, massacres took place in all the prisons and religious houses of Paris, and France was declared a republic. Louis XVI. Marie Antoinette, and the Duke of Orleans were guillotined in 1793, and the war with England and Holland, and a rapid series of terrible events commenced. The elder David had already attained a reputation by his works, The Horatii, The Brutus, The Death of Socrates, and The Paris and Helen—all, be it observed, taking their subjects from classical antiquity. Citizen David became a leader of the *sans-culottes*.

A very Talleyrand he was in the facility of his transformations, whether in political adherence or in art. His bust in the Crystal Palace, with distorted lip, gives one more the idea of a hero of the Reign of Terror, than of the rank claimed for him as the father of modern French art. He it was who ordered the ceremonial of the festival of the republic, the procession of the works of art from Italy, which were brought in an imitation of a Roman triumph, and who later, was the favoured painter of Buonaparte. The portraits of Napoleon in the imperial robes, and crossing the Alps, are well known. The latter work, as designedly not the representation of the event as it took place, may be compared with the picture by Delaroche, where the general is, with greater truth to history, seated on a mule. The difference affords one means of judging of the changes in opinion on the subject of *the ideal;* changes which, of course, much concern the principles of all branches of art, but which changes are yet neither consummated nor very obvious in their ultimate direction.

The study of the antique which had commenced in France, grew up side by side with the most violent political passions. In fact, it seems to have become what it was by the force of those influences. That true love of *art* was the main engine of development, it would be hard to believe in the face of acts that are recorded. Wanton destruction to the precious antiquities of the whole country, which recent years would attempt, and in vain, to restore: similar destruction in 1794 at the Cathedral of Cologne, and the Rhine churches: the little regard for the masterpiece of Leonardo da Vinci, which permitted its decay: all these do not show that the enthusiasm amongst the artists was then supported out of love of what we call ART, by an appreciating people. Strasburgh Cathedral, it is said, was saved from destruction only by the device of crowning it with the red cap of the Jacobin club.

The antique happened to be the visible means of expressing what the nation desired to be politically. Roman example, Roman antiquities, and Roman subjects for pictures, were for a time alone regarded; so that, quoting literally from an accomplished writer, M. E. J. Delécluze,*

* M. Delécluze, formerly a pupil, and still an admirer of David, has recently pubilshed an interesting volume on "Louis David, son Ecole et son Temps."

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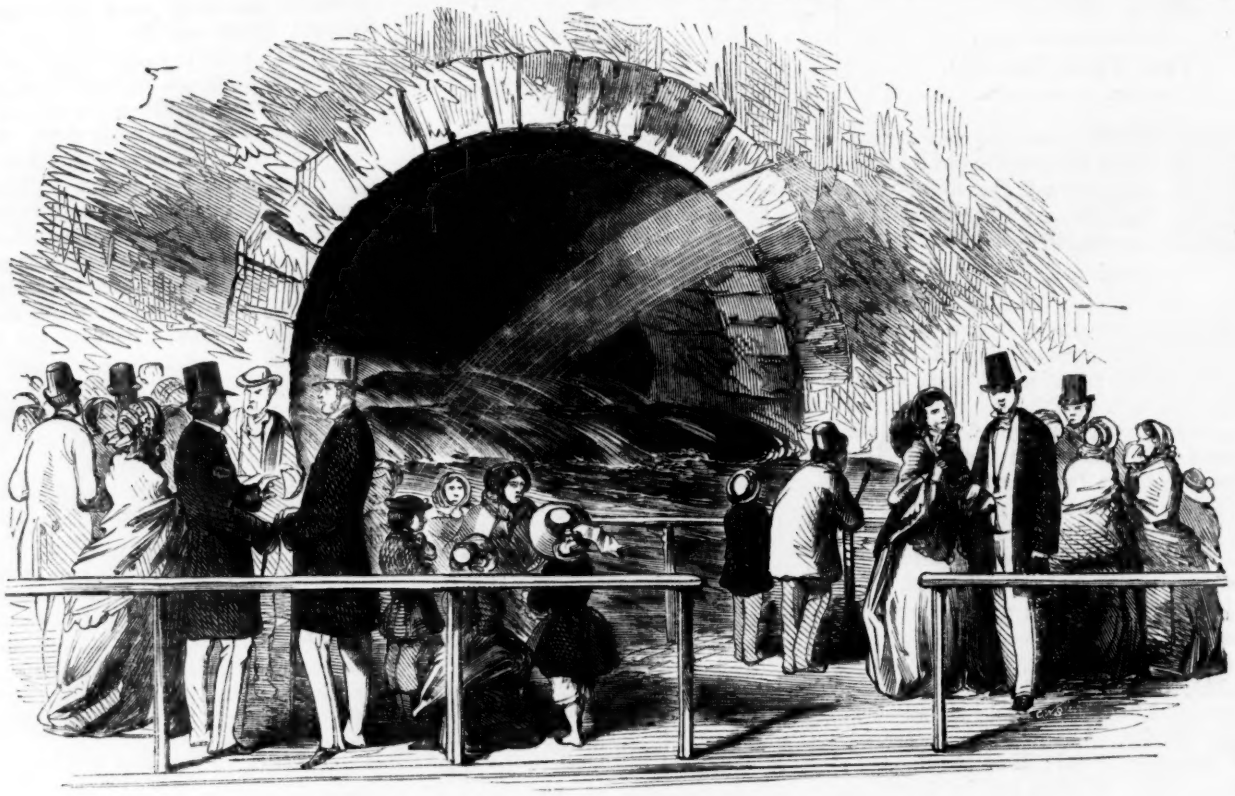

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According to the Local Management Bill, as it now stands, the Metropolitan Board of Works are to execute a scheme of intercepting sewers by December, 1860, or five years from this time, if certain preliminary difficulties can be got over,—not a very cheering prospect for those who feel the importance of properly draining London, and disposing of the refuse, even if it be realized. The chances, however, would seem to be, looking at the various duties intrusted to this Board, that it will not be done at all if left in that way. A correspondent on this subject, Mr. Frederick Smith, says,—

"A variety of plans for constructing works to rid the Thames of its impurities are before the Metropolitan Commissioners of Sewers. These commissioners have in their hands 300,000*l.* to be devoted to this special object. A committee of the court of commissioners resolved that it was expedient to refer these plans to a committee of engineers, but the court

did not act upon their own committee's recommendation. Money, plans—everything, in short, is ready for immediate action. Modify, then, Sir B. Hall's Bill thus—it is but a very trifling modification after all—hand over the plans and money to Her Majesty's Board of Works: let them at once proceed to carry that plan pronounced by a committee of engineers to be the best into execution, availing themselves of course of the successful candidate; and when Sir B. Hall's board is ready to undertake the task, let Her Majesty's Board of Works transfer the whole affair over to Sir B. Hall's board. I am no prophet if the intercepting sewers will not be very near completion by the time Sir B. Hall's board will be ready to accept the transfer."

Without confirming his belief that both money and plans are ready, we are perfectly satisfied as to the necessity of immediately taking the most energetic steps to obtain them. The present condition of the Thames is a disgrace to us as an intelligent people. We waste a fertilizer, and we poison the waters.

THE MODERN HISTORY OF ARCHITECTURE.

In previous papers it has been our endeavour —besides contributing to knowledge of facts— to lead attention to aspects in the history of architecture, whence light may be reflected upon questions in the present condition of the art. If we have succeeded so far, it will have been apparent, that at various epochs, the point had to be solved practically, between the preponderance of *novelty* as an element in art, and the subordination of that, in favour of forms supposed to be *certified* as embodying beauty of effect. The latter aim involved the whole matter of what is called "precedent-rule." Now, the object in all good artistic effort is not *one* of these two, but *two-fold;* and question on the subject never could have presented itself had not one element been unduly exalted, ere the other claimed to supply its place. It is the tendency of all opinions to oscillate between extremes. Men do not take the time to sum up and balance, in the Jeremy Bentham manner, the heads of this side and that;—indeed, it requires a colossal mind to do so. To that we can make no pretension. We merely go on to remark that, whilst it is not in evidence that before the last sixty or seventy years, the question referred to above, was raised except at comparatively long intervals, during the later period it has been revived over and over again. At least, so should we say with the single qualification that may be involved in substituting merely novelty of model for novelty of invention. Thus, from opposite directions, the same general absence of *art* was arrived at. Men forgot that the *use* of a good model was not necessarily the *right* use of it.

It should not be inferred, that all were intentionally copyists. But the result was much the same as if that had been the case. More would have been needed than the catching the spirit of the original—put forth even by recent writers as the end of art, — far more than the production of *fac-simile*. Whether chiefly from the absorption of mind in one of the materials of art—archæology, or from a low state of æsthetics (or whatever name we give to the range of philosophic analysis at this juncture first sensibly needed),—or from positive want of the requisite industry, or artist-feeling, —certain it is that the knowledge that was possessed was turned to no real account. We infer the deficiency of proper zest for *art*, because, where the case is otherwise—efforts will involve the exercise of the creative power which is productive, as essential to the existence, of works of art. With a true artist-mind, reproduction would be unthought of,—would be even impossible. Many architects of the present century deserve neither unqualified praise, nor the censure which it has been the practice of certain writers to give them. Mediocrity, however, may be a demerit in artists, as in poets.

But, it is the general perception of art that has been out of character with the age: and this has made the mistakes of which architects have been the instruments. To that only can be due the excessive apprehension about taking any step, for which immediate reference could not be quoted from an original. Wherever a feature could be drawn from the works which happened to be in favour, the praise was given to him who was supposed to copy from it. The rest of the building took its chance; and the result was a combination of discordant parts. The tendency, therefore, was to produce what was neither good in point of art, nor accurate in "copyism."

There may be novelty without beauty, and beauty without novelty; but there cannot be that particular effect which gratifies in a work of art, unless both elements are present; and we believe that the efforts to depreciate precedent, or to inculcate anything that may lead to its despotism,—the neglect of models, or the misuse of them,—are equally erroneous as restricted principles. But, as we have shown—beyond the ordinary agitation of these questions—a further influence sprang up at the new era, opening at the juncture when the old art was "a creed outworn," and when the question was—a new belief, or old? That feature of the time was the modern spirit of research,—the investigation into previous history, and the digging out of the records of former art. There was considerable difference between the spirit referred to, now, and any manifested at previous dates. The old Roman collectors had given their attention to Egyptian and Greek antiquities,—mainly to the latter. The later Italians re-discovered the collections and the works themselves, of their predecessors. But the new era inaugurated was that of general investigation and discovery.

Particulars of travels and researches in Egypt and the East, with investigations such as those in Athens by Wheeler and Spon in 1676, and the drawings of Carrey, made in 1674, as they became known, contributed, with the knowledge of what there was in Rome, to develop such a tendency. The chief *impetus*, however, in the direction alluded to, was produced in the latter part of the reign of Louis XV. in France, or within the first few years of the reign of George III. in England,—the latter reign we may say, commencing in 1760, and the other ending in 1774. Indeed, before 1760, the Greek architecture, as we have shown in a former article, was known to the French; and in England it was commented upon in Sir Wm. Chambers's treatise, published in 1759, though unfavourably to its merits. The publication of Stuart and Revett's work, commenced in 1762 (not in 1752, as by a misprint in the last article), the first edition continuing to appear at intervals till 1816. We should be disposed to ascribe to this work more of an immediate influence on the *study of classical antiquities* than similar influence on architectural *style*. It was after the expiration of the war that many of the chief imitations of Grecian architecture were produced. The copy by Stuart, of the Tower of the Winds, at Shuckburgh, Lord Anson's seat in Staffordshire, and a few other works, are exceptions; but the bulk of the Grecian Doric and Ionic of our country belongs to a much later date. Doubtless, however, Stuart helped to produce that idea of classical simplicity which was ultimately proffered in lieu of thought. His work is remarkable for careful drawings of the marbles, now forming part of the Elgin collection.

In 1772, Sir Wm. Hamilton's collection was purchased for our British Museum. Previous to that time, however, important collections had been formed in England, amongst which may be mentioned that of the Earl of Arundel, in 1634, now at Oxford. The most important English acquisition—except the Elgin marbles—the Townley collection, was due mainly to the researches of Mr. Gavin Hamilton, which commenced in 1770. It was purchased by the nation in 1805, the Elgin marbles not being acquired till 1816. The publication of the Dilettanti Society's "Ionian Antiquities," commenced in 1767,—their other works not appearing till 1815, and later dates.

Let us now look to the influences of this character, and those alluded to in the last article, which were at work in the neighbouring country. In France, attention had been early directed to classical antiquities. It contributed to the production of the Roman character of architecture, noticeable in the time of Louis XV. An edition of Montfaucon's "*L'Antiquité Expliquée,*" in 10 vols. folio, bears date 1719. Winckelmann, to whom the chief importance is due, published his "*Monumenti Inediti*" in 1767. Le Roy's work on the remains in Greece had appeared in 1758. The revolution, of tremendous importance in much that affected the condition of art, in the matter of style simply completed the course to which art had been tending under the monarchy.

The peculiar style of Louis XV. in interiors, and indeed in painting and sculpture, is so marked, and so widely prevalent, that people are apt to omit the requisite consideration of the contemporary tendency. The latter at length resulted, especially in the art of painting, in works totally different in character from that of the lively and graceful cabinet pictures of Watteau,—in works merely cold, academic, classical, and correct. As the history of such changes about this time throws light upon our especial subject, we shall venture to give them some attention. It will be recollected that the capture of the Bastille took place in 1789. Nobility was suppressed in France in the following year: in 1792, the Tuilleries were besieged and plundered, massacres took place in all the prisons and religious houses of Paris, and France was declared a republic. Louis XVI. Marie Antoinette, and the Duke of Orleans were guillotined in 1793, and the war with England and Holland, and a rapid series of terrible events commenced. The elder David had already attained a reputation by his works, The Horatii, The Brutus, The Death of Socrates, and The Paris and Helen—all, be it observed, taking their subjects from classical antiquity. Citizen David became a leader of the *sans-culottes*.

A very Talleyrand he was in the facility of his transformations, whether in political adherence or in art. His bust in the Crystal Palace, with distorted lip, gives one more the idea of a hero of the Reign of Terror, than of the rank claimed for him as the father of modern French art. He it was who ordered the ceremonial of the festival of the republic, the procession of the works of art from Italy, which were brought in an imitation of a Roman triumph, and who later, was the favoured painter of Buonaparte. The portraits of Napoleon in the imperial robes, and crossing the Alps, are well known. The latter work, as designedly not the representation of the event as it took place, may be compared with the picture by Delaroche, where the general is, with greater truth to history, seated on a mule. The difference affords one means of judging of the changes in opinion on the subject of *the ideal;* changes which, of course, much concern the principles of all branches of art, but which changes are yet neither consummated nor very obvious in their ultimate direction.

The study of the antique which had commenced in France, grew up side by side with the most violent political passions. In fact, it seems to have become what it was by the force of those influences. That true love of *art* was the main engine of development, it would be hard to believe in the face of acts that are recorded. Wanton destruction to the precious antiquities of the whole country, which recent years would attempt, and in vain, to restore: similar destruction in 1794 at the Cathedral of Cologne, and the Rhine churches: the little regard for the masterpiece of Leonardo da Vinci, which permitted its decay: all these do not show that the enthusiasm amongst the artists was then supported out of love of what we call art, by an appreciating people. Strasburgh Cathedral, it is said, was saved from destruction only by the device of crowning it with the red cap of the Jacobin club.

The antique happened to be the visible means of expressing what the nation desired to be politically. Roman example, Roman antiquities, and Roman subjects for pictures, were for a time alone regarded; so that, quoting literally from an accomplished writer, M. E. J. Delécluze,*

* M. Delécluze, formerly a pupil, and still an admirer of David, has recently published an interesting volume on "Louis David, son Ecole et son Temps."

in the Feuilleton of the *Journal des Débats*,—"the austerity of the taste even became almost savage." David was hailed as *Le vrai Lycurge des Arts*.

In the revolution which occurred in art, the puritanism of the young painters anathematised everything that had been done by their predecessors: from 1792 to 1796, no *genre* painter would have had a chance of getting attention. Subjects were, in fact, selected almost exclusively from the time of the early Roman republic. There is some reflection from the same taste even in the works of Benjamin West. In England, both the Roman and general classical taste, as mentioned in our last, were expressed chiefly in sculpture. But whatever classical tendencies there were in the two countries, now should be viewed as irrespective of one another. The nations were at war; and whatever had appeared to be connected with the name of Buonaparte would have been rejected. Certain points of resemblance are to be traced in some of the furniture of Carlton House, and that of the Empire; but the resemblance, of course, arises by derivation from the same models. This department of art we may have another opportunity to speak of. For the present we have to observe the course of the influence of the French painter. David in merit was superior at least to his contemporaries. At length he himself contributed to moderate the admiration of the toga and the lictor's *fasces*, by representing an incident of contemporary life, although with some infection of the prevalent manner. The picture remained unsold; but the subject eventually became celebrated as the foundation of a new manner, which it helped to produce. The style of David, however, always retained a classical character. It is presented under its most favourable aspect in the picture of the coronation of Napoleon. That event happened in 1804.

Yet, between 1793 and 1809, taste in France underwent other important modifications. A more profound study of the antique began to show the painters the superiority of Greek art as compared with that of the Romans, who became considered as barbarians,—for as the French writer before mentioned says, in apt illustration of one of our positions above, he perhaps referring especially to France:—"It is in art as in politics,—you pass suddenly from white to black." Greek architectural details, it will be recollected, had been already long in use. David was the first to receive and transmit the new fever. In 1796 he had commenced a subject from Roman history—the picture known as the "Sabines;"—and this, as shown by a sketch extant, was originally intended to have the figures clothed with the Roman dress. The finished picture is, however, treated in the new manner. The next phase in the progress peculiarly exemplifies what we have so often before noticed as to the influence of a great master. We cannot refrain from again quoting what we find by M. Delécluze. "But," he says, "attached to the most skilful master there are always indiscreet pupils, who make false applications of the principles which they have received; and to the *hellenism*, soon succeeded a *Greco-mania*. Then, young pupils more rigorous in the matter of taste than the master, pronounced in their turn an anathema against all works of antiquity executed since the age of Alexander the Great." It must be remembered by our readers that precisely the same result tended to dim the legitimate fame of Michelangelo; and it has likewise been apparent that the indiscriminate admiration of another master, Palladio, produced some of the most unfortunate characteristics of art during the time now under review. In France, the finest works from Rome deposited in the Louvre in 1796 were viewed as corrupt, whilst the paintings on Greek vases, and even the *archaic* Greek sculptures, were held in disproportionate estimation. These causes tended to bring on the school discredit of which the master for some time bore the imputation.

The *mania* in question was at length dispossessed by another—of great importance, though of short duration; but the consideration of this we must reserve for another article.

ON POLYCHROME.

At the Warwick meeting of the Worcester Architectural Society, Mr. R. P. Pullan read the following paper on Polychrome:—

Before proceeding to say anything about the application of coloured decoration to ecclesiastical edifices, I should wish to remove the common impression that prevails that wall colouring produces a tawdry effect, inconsistent with the solemnity that should characterise a building dedicated to the service of God. We hear people who profess to admire the glowing glooms of stained glass windows, who rave about the ruby-coloured robes of the martyrs, who have a decided partiality for the painted pages of illuminated missals—who do not find fault with the warm hues of encaustic tiles, and who tolerate the introduction of altar pieces, painted in the rich yellow tones of the Italian school, or in the crude colouring of modern days, exclaim loudly, and I must add most inconsistently, against the introduction of polychrome in any shape, unless it be of the faintest, mildest, and most undecided character. I would remind them that although in all polychromatic decoration, only the primary and secondary colours are employed, yet that if they be distributed with good taste, the most refined and gratifying combinations can be produced. The very fact of the laws of decorative being those of heraldic colouring prevents many of those violations of taste that so constantly occur in the application of colouring upon colour, without an intervening line of black or white; and the constant use of diapers enables any one to avoid that glaring effect generally produced by large masses of colour unbroken and unsubdued. I would point out the Alhambra, as affording one of the most satisfactory specimens of refined colouring as exhibited in its reproduction by Mr. Owen Jones in the court of the Crystal Palace. It is well known to all that we have sufficient precedent for employing every means in our power to give our churches a richly-clothed and furnished appearance. It is well known that not only were almost all the buildings of the middle ages decorated with colour, but that also those people to whom we attribute perfectly pure and refined taste (the Greeks) coloured their finished works of art; that the friezes and pediments of the Parthenon, for instance, were decorated, and that in a bold and liberal manner; and that there was no stint of colour, but that there were masses of blue, red, and gold, which heightened and completed the effect of that noble edifice. As to the extent to which polychrome was employed in the middle ages, we have only to go into some of the nearest parish churches that have been unrestored, and with a pen-knife scrape off some portion of the numerous coats of whitewash on the walls, to discover traces of frescoes or of distemper paintings, and the result of our explorations will be such as to convince us that the mode of adornment was general, if not universal.

Having said a few words in defence of the practice, I may add some remarks upon the characteristics of the ornaments employed in the various styles; and it will not perhaps be uninteresting to you to hear something of the *modus operandi* made use of by me when superintending the decoration of the Byzantine and Mediæval Courts in the Crystal Palace, and in other buildings. As to style, the Byzantine style affords a wider field than any other for the purpose; for there are in all buildings of that period large spaces left round the domes, in the spandrils, and soffits of arches, which do not admit of the introduction of sculpture ornament, but afford ample space for the reception of coloured foliage and figures. Round the dome were generally arranged figures of saints beneath "the Palms of Paradise." On the spandrils were seen the four Evangelists or the four doctors of the Greek church. Our Saviour seated in judgment filled the conch above the apse. The soffits and wall spaces were covered with foliage, real "Arabesques," and with medallions here and there. The columns and pavements being of rich marbles, the effect produced is gorgeous in the extreme. I believe no one could enter the Church of St. Mark, at Venice, without being impressed by the magnificent *coup d'œil* it presents. I have lately had an opportunity of inspecting the finest Byzantine building in the world—the Mosque of St. Sophia, at Constantinople, the mother of all other churches in that style, and was gratified to observe that the few other Byzantine buildings that exist, bear a strong family likeness to their prototype, as far as arrangement and character of pattern are concerned. This style is in a measure applicable to our Roman buildings. In the Early English style, diapers became frequent, figures became more graceful, the eyes were no longer of the conventional almond shape, nor were the ladies all represented as brunettes: draperies partook of the elegance of those we find in the pictures of Giotto and Cimabue; and architectural features such as niches and crockets were introduced; but the crockets were then only in the bud, and were not fully developed until the Decorated and Perpendicular periods, when the foliage became much more flowing and elegant in its outline. Geometrical patterns (some of them of a very elaborate character) were common in backgrounds of the Decorated style. And I may mention that the "master" of architecture and decorations, Pugin, adopted this style as the perfection of both branches of art. In the Perpendicular style, draperies became more crisped and foliage also, figures and faces assumed the rather heavy proportions that we find in the engravings of Albert Durer, and in the stained glass of the time. Stained glass is always valuable as affording the best authority for costume and ornament for wall painting, seeing that so few wall pictures remain in England.

As to the mode of execution as adopted in the Crystal Palace, after making the designs and careful drawings of the ornaments and figures, I gave them to an artist who made stencils of them; the walls were then prepared, and the spaces to be covered traced out with black lines; the patterns were then distributed among fifty or sixty men, each taking his particular department. Encaustic painting was used for the Byzantine, and oil painting for the Mediæval Court, and the result I think goes far to prove the excellence of the former medium. However, distemper painting for a church, where the walls are not damp, is equal, if not superior, to either. At a church at Hawarden, in North Wales, decorated under my direction five years ago, there was no sign of the colours having faded, though everything was done in distemper.

THE BUILD AND HISTORY OF THE VIOLIN.

The remarks upon Mr. Webster's artistic impersonation in the *Builder* of the 21st ult. lead me to think that a few words upon an instrument which, for disputed origin, singularity, compactness, simplicity of construction, power of delineation, and universality of adoption, has not its equal, may not be unacceptable to those who view the progress of science on its broadest and most comprehensive basis.

The poetical speculations of Pythagoras, Athenagoras, Varro, Lucretius, and others, upon the origin of music; Plato's reference of the invention to the Egyptian deities, Osiris, Isis, and Hermes; that of the Hindoos to Brahma, and all the other references to mythology, classic and barbarous, are received in these matter-of-fact times at their exact value—a smile.

As in most cases where origin is obscure and benefit extensive, many nations have claimed the honour of the first thought; and, as usual, the lovers of the classic have affected to trace its beginnings to remote antiquity, and accordingly find its type in the meagre descriptions handed down to us from the Greeks. In some ancient Greek tablets, dating, according to Professor Murchard, 709 B.C. it is stated that "Pherekydes stretched four strings upon a piece of wood, and played upon them with a smooth stick." This instrument was called the "epigonion." Its derivation, however, επι, *supra*, γονυ, *genu*, would seem to indicate that its position must have been that of a violoncello. The stick, however, was most probably an instrument of percussion, and the tone a fable. Euphorion, on the

Isthmian Games, describes the "Magadis" as touched by the *plectrum;* and Philostratus of Athens, describing Orpheus and his lyre, says, "in his right hand he held the *plectrum*."

What the *plectrum* really was, however, we cannot now say;—the translation into "*bow*" being a mere make-shift for want of a real equivalent. Baillot, in his "*Méthode du Violon*," says, "The violin is presumed to have been known from remotest times;" and again, "this form bears much affinity to that of the lyre, &c. Unfortunately, however, for these theories, the few statues extant, supposed to be antique, representing Orpheus or Apollo playing upon a viol with a bow, have been proved spurious by high authority, as Winkelman, and others.

But these speculations are very unprofitable. The fact is, that the period when the violin may be said to have originated was when the important discovery was made that the drawing over the strings a certain material, such as horsehair, covered with a resisting medium, such as resin, would produce a powerful and continuous sound. This discovery of the principle of the bow was as important for the developement of the violin, and with it of music generally, as that of the steam-engine for mechanical, or gunpowder for explosive power; and, therefore, setting aside the flowery fictions in which so many writers love to indulge their taste for allegory, and extricating ourselves from the realms of mythicism, we enter the regions of reality, and first touch *terra firma* somewhere about the tenth century. In the Cottonian Collection in the British Museum is a manuscript of the Psalms of David, in the frontispiece to which that monarch is represented playing on the harp. Before him stand four "gleemen," one of whom plays with a bow upon a kind of violin. This drawing is perhaps one of the earliest that records that instrument. Other manuscripts prove its existence about the same date.

In the twelfth century the viol was common amongst the Provençal troubadours. They styled it the "viula," whence our viola or tenor.

The state of music amongst the British bards,—the Norman minstrels, descendants of the ancient Scandinavian Scalds,—and the Provençal troubadours, is a subject full of interest. The French used more than twenty instruments in the reign of Philip de Valois, but the forms of most of them are lost to us; but the bassoon, trumpet, flute, hautbois, harp, guitar, viol, cymbals, and drum were amongst them. The Welsh claim the origin, on the strength of a rude instrument of an oblong square shape, called the "Crwth." From this the English doubtless derived their term "crowd," which, with that of "fiddle," obtained until the importation of the perfected article from Italy, when the term "violin" supplanted them. Although the *fidicula* of the Romans had no connection with the fiddle, yet the term "fiddle," doubtless, had with *it;* and the Anglo-Saxon *fithele*, and earlier German *vedel*, with their Danish, Icelandic, and Dutch varieties, all own *fidicula* for their original. The hackneyed line recording that "Nero fiddled while Rome was burning," is a fable, no such instrument existing for 1,000 years after Nero's reign.

From the old Norman-French word *viol*, its varieties have derived their distinctive appellations; though for a long period they were only called treble, tenor, and bass viols. The name of *viol di gamba*, from its position between the legs, was for a long time the distinction of the bass variety. Finally, the terms *violone* or *contra-basso*, *violoncello*, *viola*, and *violino*, comprised the distinctive titles of the viol family in its perfected state. To this glorious quartette may be added a fifth diminutive in the *piccolo*, or kit, which latter is held, however, especially sacred to the *maître de danse*. The "rebec" was also an ancient name for the early specimen of the fiddle, and old French writers applied the term *barbiton* to the whole class. In England, says Dubourg, no family of consideration during the sixteenth and to the middle of the seventeenth century thought its establishment complete without a regular set of viols.

Public performers were few till the beginning of the seventeenth century, and vocal music not much cultivated, though in Italy it had attained much perfection. In the reign of Charles I. music suffered long and grievous depression, and during the Protectorate, the cathedral service was abolished, and organs removed from the churches. In Charles the II.'s time, engraved music was introduced, and the science thence advanced to the culminating point.

But few works can be consulted upon the construction of the violin. That of Jacob Augustus Otto, though very short and insufficient, is perhaps most useful. An elaborate work on the matter is much wanted; but so nice is the subject, so fine the thread upon which excellence depends, that it is extremely difficult to *describe* the rules for obtaining it, and like that of the Freemasons, "the secret" is likely to be confined to the craft. An eminent dealer told me yesterday, that after twenty-five years of study he had just produced his *first* violin! The finest models of the instrument were made at Cremona. Hieronymus Amati, at the beginning of the seventeenth century, Antonius Amati at the middle, and Nicholas Amati and Antonius Straduarius at the end of the same, and at the beginning of the eighteenth century, Joseph Guarnerius, were the makers whose instruments have enjoyed the most world-wide celebrity. Many other makers have earned a secondary reputation.

The wood generally used is of three sorts—Sycamore, for back, neck, and sides; Tyrolese soft red deal, for belly; and ebony, for finger-board and tail-piece. Otto divides a violin into fifty-eight parts! Only a maker can be well up in the various models, as amateurs can but rarely see more than one or two at a time. But there is no mistake about their distinctive features, though to describe them would occupy far too much space.

Hieronymus, considered handsomest generally; Antonius, but few extant, and not quite so well finished; Nicholas smaller, generally known as "Small Amatis;" Straduarius, the flattest of all models, but in tone most approved; Guarnerius, also flat and very rare. Maple is is also much used in the backs of these makers.

The fine Tyrolese instruments of Steiner differ much in make and tone from the Cremonese. Much fraud has been carried on by dealers in the clever Tyrolese imitations of Steiner and the Italian classics. Amongst genuine makers, those by the two Klotz are much esteemed. A list of German makers of repute will be found in Otto, together with such distinctive features as to make, varnish, quality, &c. as his practical experience could supply.

Many of the oldest specimens of violins—as of paintings—have been much injured by "repairing," so called; and an opinion is abroad that even the uninjured ones have reached their climax as regards tone; but others consider they will yet stand the test of another century or two. The partial failure of the specimens of the great Parisian imitator, Vuillaume, shows how difficult is the art, how uncertain the result.

For lively anecdote and much information, Dubourg may be read with advantage. Dr. Burney's "History of Music," too, and his "Musical Tour," furnish much of value in connection with the subject.

These observations are merely intended as a very rough and limited sketch of a large and highly interesting subject, in the hope of awakening a portion of the interest in the reader that actuates the writer. A. F. Ashton.

TIPTREE HALL.

Mr. Mechi has lived down all objectors, and has come to be regarded as a benefactor by the agricultural world. Very justly so, too, for even his failures give the advantage to others of knowing what to avoid, while all may profit by following in those courses which he has shown to be successful. His crops are excellent, though backward, and were pointed to as proving the value of liquid manure as distributed from his tank. Before coming to a conclusion, though, on this head it would of course be necessary to know the consistency of the fluid used, the number of applications, and the quantity of guano also applied and washed in by it. Most valuable results are involved in the success of such a system, results in which the whole kingdom is virtually interested.* We wish Mr. Mechi had given something of beauty to his buildings: it would almost seem that the endeavour had been the other way.

Lord Dundonald's huge steam-plough for pipe drainage was in action, and appeared to lay the pipes at a depth of 2 feet 3 inches, or 2 feet 6 inches satisfactorily. Whether it could be economically set to lay them at the more useful depth of 4 feet, did not appear. There was a model of a steam plough, too, by Mr. Phillips, and a reaping machine by Dray; nor must we omit favourable mention of a winnower and seed-separater, patented by Mr. Salmon, of the United States.

Mr. Mechi had around him about 300 guests, of all ranks and conditions, from the House of Peers, the House of Commons, the Church, the City Mansion House, the studio, the farm, the manufactory, and the shop, and gave an equally hearty welcome to all.†

CHURCH-BUILDING NEWS.

Much Hadham.—A chapel has been erected at Green Tye, in the parish of Much Hadham, Herts. The material is Kentish rag-stone walling and Caen stone dressings, and the style is Early English. The building was consecrated by the Bishop of London, on 18th July. Mr. G. E. Pritchett, of Bishop Stortford, was the architect, and W. Brown, of Lynn, the builder.

Snettisham.—The following were the tenders for reseating and repairs to Snettisham Church, Norfolk. Mr. J. Daws, of London, architect. Opened on the 23rd July:—

Pennington, Lynn	£1,165	0	0
Ringham, Ipswich	1,090	0	0
Brown, Lynn, and Ayton, Attleborough (accepted)	1,038	0	0
Daws, Snettisham	897	0	0
Bainbridge, Lynn	895	0	0

Northampton.—The strength of the tower arches in St. Giles's Church, Northampton, according to the local *Herald*, was lately tested by the ringing of the bells. Fears were entertained that the opening of the arches could not be effected without endangering the safety of the tower,—but these fears are said to be now diminished, if not wholly removed. The builder employed in the restoration was Mr. Ireson, and the architect, Mr. Law. The remainder of the alterations, such as re-seating, and fixing apparatus, pipes, &c. for warming, are progressing, so that if funds should be forthcoming the whole of the work will probably be finished by Michaelmas. It appears by the mottoes inscribed on the bells that they were re-cast in 1783.

Woolpit.—On 17th ult. the new portions of Woolpit church were dedicated to divine service. It was exactly three years since the old tower and spire were struck by lightning and destroyed. The new tower and spire were designed by Mr. R. M. Phipson. They are Decorated, and harmonize with the rest of the church. The parapet is of open work. The western arch is pointed. The belfry chamber is supported by a groined ceiling, and under it is placed the font, which thus stands in what makes a baptistry. The contractor is Mr. J. Y. Rednall, builder, of Woolpit. Mr. Simpson, of Stowmarket, executed the stone work. The amount of subscriptions collected from every source and paid away is 1,330*l.*; the estimated outlay, 1,750*l.*; leaving a deficiency of 420*l.* towards which 64*l.* 4s. 10d. have been received.

Tilehurst.—The consecration of Tilehurst Church, Berks, which is newly built upon the site of the ancient fabric, took place on Saturday before last. The new edifice was designed by Mr. Street, of Oxford, the diocesan architect. It consists of nave, chancel, north aisle, south aisle restored, and south porch and vestry on the north of the chancel. The chancel and porch were undertaken by the late president of Magdalen College, at his own expense; and the transformation of the red

* A trial of it on a large scale is being made at Rugby.

† We go a step out of our way to express the pleasure with which we saw amongst the guests, restored to health, Mr. Macdonald, to whom the distribution of the *Times'* Fund amongst the sick and wounded at Scutari was entrusted. It seems to us that such services, so ably performed as these were, at the risk of life, deserve some public acknowledgment.

brick western tower (built in the last century) into a tower and spire of Pointed character is being carried out by some of his friends and relatives as a memorial to him. The outer doorway of the south porch is of intricate design, and the inner has marble shafts and mouldings. All the window tracery is new, except in the south aisle, and the whole is Geometrical Decorated in style. Inside, the church is paved with Minton's tiles, those in the chancel being of a new type, the tiles being cut in curved shapes, and effect being obtained by the introduction of green among the more ordinary-coloured tiles. The seats are all open. The font is surmounted with an oak cover about 12 feet high, hung from the roof. The chancel arch springs from marble shafts, and the triple sedilia in the south wall are similarly adorned. An oak screen, with gates, divides chancel from nave, and oak stalls and seats for choristers, with carved finials, are arranged in the western part of the chancel. The chancel windows are of stained glass, to the memory of Dr. Routh. The east window, of five lights, has, in the centre light, the Crucifixion and the Ascension, and, in the side lights, types and antetypes. In the head of the window are SS. Michael and George, and a head of our Lord, surrounded with rays and with angels censing. In the side windows are,—The Song of Simeon and the Presentation in the Temple, and figures of S. Gregory, S. Augustine, and S. Chrysostom, fathers, whose works Dr. Routh had edited. All these windows have been executed by Mr. Wailes, from Mr. Street's designs. The tower has been opened to the church with a new and lofty arch of stone. Externally, the tower was originally built in a kind of Classic style, but, by taking out the old windows, bricking up others, and inserting a new doorway and belfry windows with moulded brick jambs, it has lost its former character, and begins to harmonize with the new church, although the spire is not yet completed. Mr. Street's designs have been carried into execution by Mr. Wyatt, of Oxford.

Farnham.—The old church here, which has been re-pewed and extensively repaired and beautified, at a cost raised by voluntary subscriptions, was reopened for divine service on Wednesday before last.

Ryde. — The Congregational new church named St. George's, just erected on the site of the old George-street chapel, has been fitted up with many interior points of resemblance to a church. The style, according to the *Hampshire Advertiser*, is Grecian. The western front, which forms the grand entrance, consists of a pediment supported by fluted pillars, surmounted by a cupola. The side facing Melville-street presents a blank space, entirely unrelieved, except by shallow niches or blank windows, the light being entirely supplied from skylights in the roof. The interior is not choked up with galleries, and the whole length of the nave is fitted with open seats. The chancel at the east end is supplied with a circular stained glass window, and the floor is raised in the usual manner, above that of the nave. Instead of the communion-table, however, it was recently decided to place the pulpit in the centre of the chancel, for the sake of uniformity. In the centre of the building is suspended a large circular chandelier. The consecration took place on Wednesday before last.

Chichester.—The restoration of the west front of St. Olave's church has been commenced. Two buttresses were in course of erection, but being found to project half an inch beyond the adjoining houses, they were, on the orders of the commissioners, taken down and set back.

Chippenham.—On Monday in week before last, the new cemetery here was consecrated by the Bishop of Gloucester and Bristol. The burial-ground is divided, part for the Establishment, and part for Dissenters. There are also chapels, architecturally united by an entrance screen, but respectively appointed for the different burial-grounds. The chapels have nave and chancel. The windows are in the Decorated style. There is a bell-turret over the entrance. There is also a cottage for the custo or sexton.

Bridgnorth.—The consecration of the new cemetery took place on Tuesday week. The site is about half a mile distant from the town. A lodge stands on the right of the entrance, occupied by the superintendent and registrar. There are two small Gothic chapels, one for the Establishment, and the other for Nonconformists, the former at the eastern extremity of the ground, and the latter on the north side. The chapels are nearly uniform in design: they are built with stone from Marlbrook quarry, with Bath stone dressings, and the windows are filled in with plate glass. They are after designs by Messrs. Truefitt and Edmiston, of London, architects, and executed by Messrs. Powell and Foxall, builders, Bridgnorth. The cemetery is enclosed by a wall, with rustic coping, built of red sandstone, obtained on the spot. The portion allotted to Nonconformists is indicated by the insertion of kerbstones. The cemetery comprises 8a. 0r. 1p. of which 5a. 0r. 25p. is appropriated to the Established Church, and the remaining 2a. 3r. 16p. to Nonconformists. The land was purchased at a cost of 400*l.*; expense of building two chapels and lodge, 1,200*l.*; walling, 390*l.*; plants, 50*l.*; making roads, 100*l.*; and architect's commission, 100*l.*; total, 2,240*l.* The sum allowed by the vestries was 2,450*l.*

Kingweston.—On Thursday before last, the church dedicated to All Saints, recently built, according to the *Taunton Courier*, by the liberality of Mr. F. H. Dickinson, of Kingweston, with the additional burial-ground, was consecrated by the Bishop of the diocese. The church has a tower and spire of the height of 132 feet. It is built in the Early English or Decorated style of architecture, of Doulting stone and blue lias. Mr. Giles, of Taunton, was the architect. The work was done by Mr. Henry Dawe, of Taunton, mason, under the immediate superintendence of the founder, Mr. Dickinson. The spire lantern stands upon eight windows, so that the peal of bells when rung may be seen at a distance from the church. The interior is laid with Minton's encaustic tiles, and the altar-table is composed of Serpentine marble from the Lizard rocks, Cornwall. The stone corbels of the capitals were carved by Mr. H. Davis, of Taunton, who executed all the carving for the interior of the edifice. The new building stands on the site of the old parish church.

Cheddar.—The consecration of the new cemetery here took place on the 20th ult.

Smethwick.—On Tuesday before last, the consecration of the new church of St. Matthew, in Windmill-lane, Smethwick, took place. The church is intended to accommodate 450 persons, 250 free. Mr. Samuel Briggs was the builder of the edifice.

Willenhall.—Holy Trinity Church was consecrated on Wednesday before last. The church, which has been erected at a cost of 4,500*l.* and accommodates 700 persons, is in the Early English style. The material is a brown stone quarried in the neighbourhood. Externally the edifice is ornamented with a Bath stone bell-turret; and internally with a low pulpit of Caen stone, and a baptismal font of same material, both carved. The roofs of the nave and chancel are open and lofty, and the timbers are stained. Encaustic tiles, the gift of Mr. H. Minton, are laid down in the chancel. All the sittings are without doors, and a large proportion are free. The architect is Mr. W. Horton, of Wednesbury. The builder is Mr. J. Wilkes, of Darlaston.

Ashbourne. — The reopening of Mayfield Church took place on 19th ult. For nearly a year this old church has been undergoing extensive alterations and enlargement. A new aisle on the north side has been added, and an old gallery, which blocked up an arch, has been removed. The old Norman pillars and arches, which before were covered with whitewash, have all been restored and dressed. The church has been entirely repaired, and above one hundred additional sittings have been made for the poor. Mr. W. Evans, of Ellastone, builder, was employed.

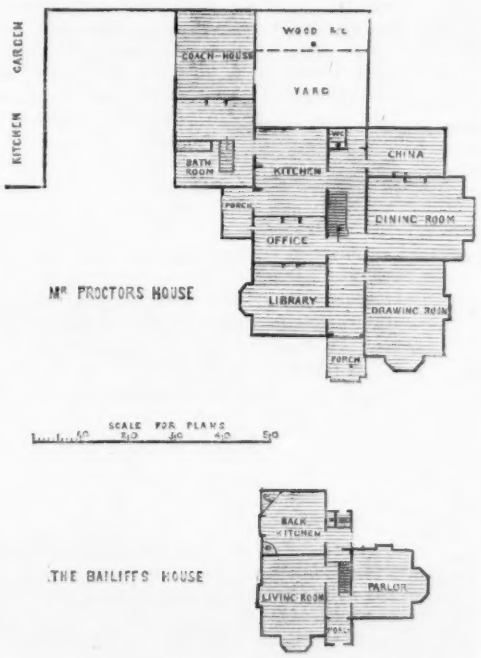
Rowsley. — On Wednesday before last the church of St. Catherine, recently erected in the picturesque vale of Rowsley, was consecrated by the Bishop of Lichfield. The edifice is in the Norman style. It has no galleries, and the seats or stalls are confined wholly to the body of the church. A memorial window of stained glass has been placed over the communion-table in the chancel, to the memory of Catherine, the late Lady John Manners. In the centre compartment are two groups of figures, emblematical of the resurrection, with an inscription in old English characters. This window has been designed and erected by Mr. T. Williamont, of London. The Commandments have been painted on zinc, with illuminated borders and initial letters, by Costell, of London. The site of the building, which was presented by the Duke of Rutland, is a small eminence, in a road leading from Rowsley to Manners' Wood. The architect was Mr. Anthony Salvin, jun. of London; and the builders were Mr. Hibberd and Mr. Ellis, of Bakewell. The church has been dedicated to St. Catherine, "after the name and in honour of the late Lady Manners." The cost of the building and appurtenances was 800*l.*

Leyland.—St. James's Church, Leyland, was consecrated on Wednesday week, by the Bishop of Manchester. The church is in the Early English style, and consists of a nave, north aisle, and chancel, with a tower at east end of nave. The walls are of Whittle Hill stone, with dressings of Longridge stone. The nave is 50 feet long by 25 feet wide, with trussed rafter roof, continuous over the chancel, which is of same width as nave, and 25 feet in length. At the western end of nave, an arch opens into the tower portion of the building, and is intended for the church scholars. The north aisle is of same length as nave, with which it communicates by three arches, supported on octagonal columns, with moulded caps. The square tower, with buttresses, is surmounted by an octagonal spire, pierced by eight quatrefoil lights: the height of the vane from the ground is 148 feet. The roof is an open one of framed timbers, and stained firs, covered with green Westmoreland slate. The fittings are of a simple character, executed in pitched pine. The building is calculated to hold between 400 and 500 persons. The east end of the church is lighted by a stained glass window, the work of Mr. Warrington. The subject of the central light represents the mother of Zebedee's children soliciting that her sons might sit on the right and on the left of our Saviour in His kingdom. In the right-hand light is a portrayal of Jesus, suffering little children to come unto him; and the left-hand light represents the deed of the good Samaritan. The church is heated by hot-water apparatus. The parsonage and stabling are situated on the south side, and are built in the old English style, with brick walls, and stone dressings to the windows, &c. with lofty chimneys in ornamental brickwork. The entrance from the road is opposite the north porch, and consists of a small bridge across a sunk fence: on this is placed one of the old oak litchgates, covered with a stone roof. Mr. Ewan Christian was the architect employed on the erections; and Mr. W. H. Espinett, also of London, has superintended the progress of the work. Mr. Armstead, of Preston, was the contractor; and Mr. Aughton, jun. sub-contractor. The land was given by the Misses Ffarington, but the church has been built at the sole expense of Mrs. Ffarington. The outlay has been between 3,000*l.* and 4,000*l.* The workmen employed on the works, with several of the contractors and others, celebrated the opening by a dinner at the Union-hall, Leyland, when about 120 persons were present.

WALLS' COURT FARM, NEAR BRISTOL.

To complete the illustration we annex a view of Mr. Proctor's residence, and one elevation of the bailiff's house, together with sketch-plans of both. The residence is situated at a short distance from the farm-buildings (see page 342, *ante*), and the bailiff's house is at Stanley Farm, adjoining, which belongs to Mr. Proctor.

Both are built of the local stone, with Bath stone dressings. In the residence, however, the inner face of the walls is of brick, as it was feared, the stone being non-absorbent, that damp would show. The house is raised on a turfed slope, and has a prospect tower, from which the whole of the farm and lands may be viewed. We will not venture to speak of its convenience.



RESIDENCE, WALLS' COURT FARM, NEAR BRISTOL: AND BAILIFF'S HOUSE.—Mr. Godwin, Architect.

PROVINCIAL NEWS.

Cardiff.—The new dock was opened with great ceremonial and rejoicing on Friday before last. The dock now opened is but one-half of the intended size; and operations are actively being proceeded with, to carry out the whole project. The new dock was commenced in January, 1852. It is of the following dimensions:—Length of locks, 220 feet; width of locks, 55 feet; length of basin, 380 feet; width of basin, 250 feet; length of dock, exclusive of extension, 1,000 feet; width, 300 feet. The extension, which it is expected will be completed in December, 1856, will give a total length of 3,000 feet. The contractors are Messrs. Hemmingways and Pearson. There are already coal shipping machines provided; and it is intended to place two lines of rails on the east side—one, of the Rhymney Valley Railway, and the other a branch of the South Wales; and on the west side there will be connecting branches with the Taff Vale. All these lines will find traffic in the large quantities of iron and coal which this dock—calculated to accommodate 200 per cent. more shipping than the old dock—will require. The day of opening was observed as a complete holiday, with public dinner and ball, fireworks and illumination, &c. and a feast to the 700 workmen employed by the contractors.

Warrington.—The borough surveyor, Mr. B. Coxon, has been appointed, by the town council, inspector of nuisances, and Mr. Hackey, deputy inspector. ——It is rumoured that through the instrumentality of the rector, the Rev. Mr. Quekett, steps are about to be taken for the establishment of model lodging-houses in this borough.

Lynn.—The local Baths Committee, on Monday before last, met to open tenders for the construction of public baths here. Only two were received, viz Mr. M. Bambridge, 1,792*l.*; and Mr. J. Stimpson, 1,450*l.* As the committee have only 1,250*l.* to lay out, they have requested the architect's advice on the subject, and it is presumed the plans will have to be reduced.——The first stone of the new Workhouse was laid on Monday in week before last. ——Measures have been taken for the much required ventilation of the Corn Exchange, by raising a portion of the roof so as to form a kind of lantern. Plans for the purpose were recently laid before the committee by Mr. Maberley, the architect, and the tender of Mr. John Laird, to execute the works for 80*l.* has been accepted by the town council. It appears from a statement in the *Norfolk Chronicle*, that the receipts from the Exchange from the opening to 19th ultimo, have been 438*l.* 10s. and the expenditure 64*l.* 12s. 6d.

Hartlepool.—The works at the New Dock here are making progress. Considerably over 300 workmen are daily employed upon the masonry and excavations, and it is anticipated that the dock will be ready for opening during the first week in October. The works connected with the Graving Dock are also being pushed forward.

Glasgow.—At a meeting of friends and patrons of art, held in the Council Chambers, under the presidency of the Lord Provost, a committee has been appointed to raise subscriptions for the maintenance, as a Museum of Art in Glasgow, of the collection made by the architects for the Scottish Exhibition. A sum of 3,000*l.* is required to free the promoters from personal liabilities. The proceeds of the exhibition pay all current expenses.——The New Suspension-bridge over the Clyde, at the Humane Society's House, is approaching completion. The approaches have been laid out, and planks to form the footway are on the bridge.

Hamilton.—The new militia barracks here in course of erection, consisting of 15 one-story houses, each 50 feet in length, will accommodate four sergeants and 449 privates. There will also be a cooking-house, 50 feet by 18. The new erections occupy a line of 850 feet, along the barrack boundary wall, which forms one of the side walls of the houses, and is fully 2 feet thick. The opposite side walls and gables are of brick. The height of the side walls is 10 feet; length of each room, 50 feet; width, 18 feet 8 inches. The riding-school has been turned into a men's mess-room. The contractor is bound to have the new barracks done within less than two months.

SURVEYORS' CHARGES.

POLAND *v.* TEBBUTT.

This was an action in the Bloomsbury County Court, a notice of which appeared in our last impression. It will be in the recollection of our readers that the case was adjourned in order to enable the plaintiff to produce evidence, that the charge of 1*l.* 1s. for going over the extra work, and settling the accounts of these extras, was really in the nature of commission, the principle affirmed by the judge (Mr. Heath) being, that where surveyors charge by *commission*, they are precluded from adding any charge for *time*. There was also another item of 1*l.* 1s. disputed by the defendant, for resisting an encroachment, by the defendant's neighbour, in some alterations that were about being made under the direction of Mr. Knight, a surveyor. Mr. De La Mare was now instructed on behalf of the plaintiff, and Mr. Williams, as before, appeared for the defendant.

Mr. Brown, the builder, who had made the alterations, was now called, and stated that in addition to the 12*l.* for the original repairs, he had received the further sum of 24*l.* for extra work, which had been duly superintended by the plaintiff in the ordinary way.

Mr. Williams now submitted that, as to this item the plaintiff could not recover, as by the custom of the profession commission was never charged upon extra work! This assumption was negatived on the part of the plaintiff by his personal evidence.

The Judge said, he was clearly of opinion that the plaintiff was entitled to commission on all sums actually paid to the builder. This item must, therefore, be allowed, unless special cause was shown to the contrary.

As to the encroachment, evidence was given that the plaintiff acted as the defendant's surveyor, and adopted the plaintiff's suggestions.

The learned Judge thereupon allowed this item. The result of the whole case was, that the postage 2s. was taken off, and it was held that the charge of 1*l.* 1s. for the preliminary survey of the premises was included in the charge for commission; and the sum of 1*l.* 3s. thus being taken off, the sum of 8*l.* 6s. was allowed as the plaintiff's claim.

Mr. De La Mare then applied for costs, and after a lengthened controversy, the costs of the plaintiff's attorney, and all his witnesses, were allowed.

ZINC PAINT.

As an interested party in the question lately treated in your useful paper relative to the advantages of White Zinc Paint, I hope you will allow me to offer a few observations, referring particularly to the substance of the article of 26th May (p. 243, *ante*).

The article says, that "If the work is to have the maximum of durability, the turpentine should be reduced to the smallest possible quantity, because in the oil is the principle of stability."

To a great extent I agree with this, and thence one of the greatest advantages of oxide of zinc as a paint, the absorbing quality of this oxide being far greater than that of any material hitherto used as a pigment; but therein, also, may be the cause of certain disadvantages if this absorbing quality be abused: a quality good in itself may become a defect if unduly treated.

The important point which must be kept in view in order to insure a durable, clean, and well-covered surface, is the extent to which the oxide of zinc is to be allowed to absorb the oil in mixing; and allow me to state that in practice the unrestricted admission of the principle, that the greater the quantity of oil absorbed the more perfect the paint, has led to great mistakes.

Our experience in the use of zinc paint, which has been for several years very extensive on the Continent and in America, has taught us that there is a very exact medium to be observed in mixing this paint, and that allowing the oxide to imbibe too much oil is quite as objectionable as the contrary.

If too freely diluted with oil, two prominent defects will be found to result.

1st. Too great transparency, causing want of covering power.

2nd. A constant, although imperceptible oozing out of the excess of oil: thence the perpetual formation of a slight glutinous coating on the surface, which attracts and retains every particle of dust or dirt floating in the air which is brought in contact with it; and this effect will continue for a considerable time,—in fact, until all the superfluous oil has thus slowly evaporated, and the paint definitively hardened. This alone is the real cause of the failing which you have observed.

In consequence of the great durability of the colour of zinc paint, a house painted with it may be washed for a succession of three, four, and even five years; and after each successive washing the surface will be found as clean and bright as when fresh painted. Of this fact there are even in London several instances to show. This circumstance mainly led us to consider the fact I have just submitted to you, and to seek for a remedy. In the first place we found that exterior surfaces, painted with zinc too freely diluted with oil, on the usual assumption that the more the oil the better the paint, foul very rapidly, and require frequent washings to be kept clean; but we at the same time discovered, that after each washing these surfaces remained clean for a longer period, and this because such successive washings carried off the thin glutinous coating formed on the surface by the exuding of the oil, and rendered its re-forming less frequent, and more imperceptible as the superfluous oil became diminished. We also remarked, as would naturally follow, that surfaces painted flat (with more turpentine) did not foul as surfaces painted bright with more oil. It was also found, that where oil to the full extent of the absorbing power of the oxide was used, it covered less effectually than lead paint. Hence it became our object to ascertain the exact proportion of oil required to ensure the greatest durability of the paint and efficiency of covering, without causing the defect of softening and fouling, and at the same time the due proportion of turpentine to be added, so as to give the paint the degree of fluidity required to ease the labour of spreading, without producing such transparency as would be detrimental to its covering power, or giving it a tendency to pulverise, which would be the case if turpentine were added too freely.

In fact, all objections to the use of zinc paint may be traced to the difficulty of arriving at the exact necessary proportions of oil and turpentine; perhaps, also, to a little special practice in laying on a new material. It should, however, be remembered, when zinc and white lead are respectively properly mixed, and equally liquid, that the former invariably contains more oil, and is at the same time lighter and more easily spread, and that it will cover equally well, and paint a larger surface, in proportion to its weight.

I think it will be generally acknowledged, that if a material has been found free from the several disadvantages attached to the use of white lead, and equal, if not superior in its advantages, it would be conferring a benefit on the public to demonstrate the fact; and if, therefore, any experiments should be suggested to show that such is the case in respect to zinc oxide, I shall be most willing to take part in conducting them, and giving such suggestions as our experience has pointed out to us as being practical and true.

For the Vieille Montagne Company,
R. G. Fisher.

DUTIES OF DISTRICT SURVEYORS.

Our attention has been directed to a clause in the Metropolis Local Management Bill, which, as it seems to us, ought not to be allowed to remain, and we trust that its omission will be arranged for in the House of Lords. The clause is as follows:—

"Every district surveyor acting under the Act of the session holden in the seventh and eighth years of her Majesty, chapter 84, or under any Act repealing or amending the same, shall without any fee or reward enforce the observance of this enactment [as to the non-occupation of underground rooms not in accordance with certain requirements], and proceed for the recovery of penalties thereunder, and report periodically, and otherwise, as the said Metropolitan Board may order, to such Board, all cases in which rooms or cellars are occupied contrary to this enactment in the district of such surveyor, and also to the respective vestries and district Boards all such cases occurring within such parts of his district as may be within their respective parishes and districts, together with the particulars of the cases in which proceedings may have been taken for penalties, and the result of such proceedings; but nothing herein contained shall be construed to disable other persons from enforcing this enactment, and taking proceedings for penalties thereunder."

A duty of this kind is altogether apart from the duties of the district surveyor as marked out by the Buildings Bill, and should devolve on the police or inspectors of nuisances. It would seem to be a duty without end, requiring constant attention, and would take off the district surveyors from their proper province, enforcing attention to the constructive requirements of the Buildings Act. All are interested in having for district surveyors men of high standing and professional knowledge; and this clause, if it be permitted to remain, will unquestionably tend to keep such from the office.

Irish National Gallery.—The estimated cost of the new Irish National Gallery is 11,000*l.* of which Government contributes 3,000*l.* this and the same sum next year, making 6,000*l.* in all. The remaining 5,000*l.* is made up of subscriptions to commemorate the public services of Mr. Dargan.

SPONTANEOUS COMBUSTION.

Referring to your notice of Dr. Inman's work on the above interesting subject, in the *Builder* of last week, I am tempted to describe an instance of spontaneous combustion, which occurred on my own premises a few years ago, and may serve as a warning to others.

The roof of a large coal-shed was one day discovered to be on fire, which was, fortunately, quickly extinguished, but occasioned much surprise as to how it could have originated. On examination, I found the tiles were destroyed on part of the roof, and the rafters, which were old and rotten, exposed to the sun and rain. A quantity of fine coal-dust had settled on the upper surface of the rafters. The weather was hot, with occasional showers, and I suppose a kind of fermentation of the rotten wood* had taken place, and ignited the coal-dust: at any rate, after minute nquiry, no other explanation of the mystery could be rrived at by

A. S.

A correspondent, Mr. W. Brotherton, points attention to the use of oils in manufactories, steam-vessels, &c. as a cause of combustion, spontaneous or otherwise. These oils, he remarks, are but too generally adulterated with the cheaper volatile oils, and, from friction and heat, they rapidly disappear, but still pervade the atmosphere of places where they are used, often, indeed, penetrating to and collecting in spaces apart from these, and giving rise to fires, either from spontaneous or communicated causes. Foreign oils of a poisonous description, he also states, are often mixed with the same materials, and are supposed to give rise to heretofore unaccountable diseases; whereas if the oil of the rape plant were cultivated to a sufficient extent to supply the enormous demand, such evils would be obviated, and much good would ensue, both to our agriculturists, our manufacturers, and all who use such oils, or breathe the atmospheres in which they are used.

Notices of Books.

Homes for the People, in Suburb and Country: in a series of 100 *original designs.* By Gervase Wheeler, Architect. New York: Scribner. London: Trübner. 1855.

It is quite possible that the information here gathered together may be useful in America; in some respects, even in England; and that if the work had been done in an honest, honourable manner, we should have thought the compiler of it entitled to praise. So far, however, from this being the case, if we may judge from that which comes immediately within our knowledge, the author has appropriated the writings of others in the most extraordinary manner, without the slightest acknowledgment.

He has thus laid under contribution the series of papers on the History of Architecture, first published in our journal in the shape of Letters to a Lady, and afterwards in a volume, under the title of "History in Ruins,—a Handbook of Architecture for the Unlearned." We have placed a couple of passages side by side to prove our case:—

"*History in Ruins.*"	"*Homes for the People,*" (Page 20-21.)
"We are apt, in the business and bustle of to-day, to forget too entirely the past: everything which serves to take us back to the early periods of the world's history, to force upon our notice the age of prophecy, the foundation of Christianity, the rise and fall of states, must tend not merely to interest, but to expand the mind; will enable us to estimate rightly our present position, and, by showing what *has* been done, assist us in making further advances. You will see at once, too, that by a knowledge of architectural history, and the peculiarities which characterise the works of various people and epochs, the pleasure of travel is greatly increased: every stone is suggestive of an idea, and every old building becomes an open book, wherein with this knowledge those who run may read."	"We are too willing, amid the hurry and the business of to-day, to forget utterly the past: in our struggle onward, we have little time for a backward glance; and yet, everything that may help to lead us back to the early world's history, that may serve to force upon our attention the age of inspiration—the rise and fall of nations, the planting and the spread of Christianity, must tend not merely to interest, but to expand the mind. So may we learn duly to estimate this our own position, and by knowing what has been done, gain a power for further advances. At least let me claim that, by some knowledge of architectural history, and of the peculiar characteristics of various epochs of art, the pleasure of foreign travel (now so widely sought) must be greatly enhanced; for every stone would then be the token of an idea, and every old building an open book, and 'sermons in stones' be read and understood."

* More probably of sulphuret of iron in the coal, while the rotten wood would be a kind of touchwood, or tinder, to foster the combustion.

"*History in Ruins.*"	"*Homes for the People.*" (Page 108-9.)
"The houses [of the Greeks] were very plain, and contrasted strikingly with the public buildings: they sometimes stood back, within an inclosure of their own, and in front had an altar of Apollo, or a bust of the god Hermes. Inside, the houses were but simply adorned; yet we hear of painted ceilings in the time of Plato, and, at a later period, coloured stones were used, and mosaics. "I could almost wish that there was a memorial of the mythic Apollo before every Hometo-day—Apollo, always youthful,—Apollo, the representative of music, and eloquence, and poetry! What do we find in too many of our houses? Not a picture, not 'a thing of beauty' of any description; often not a thought of it. Even where thrift and carefulness reign, there sometimes shines no joy; and the clay-bound spirit never reaches its right elevation: the occupants groan instead of living. But there is a Bible on the window-sill, you will say: we want not Apollo. True. We have deeper consolation, purer teaching, higher incitement than the poor, dark Greek; but The Book scarcely required white ceilings, drab walls, gloomy looks, constant care; lamentations for ills which are not, and never may be; thoughts only for the animal life; a shutting out of the light, and refusal to be joyous. If you do not know of such houses, you are lucky in your friends."	"Centuries ago, the people of Greece were accustomed to erect in the small court-yard invariably in front of their private houses, a bust, or statue of the god Apollo, the mythic representative of lively art, the joyous and youthful patron of music, eloquence, and poetry; this to be a constant teaching of the usefulness of cultivating acquaintance, in their daily going out and coming in, with the softening and elevating influence of material beauty. Would it not be well in our day to metaphorically erect a statue of Apollo in the court-yard? "In early days, the cross was planted before the doors of many Christian homes; and its teachings were still the same; for the holy emblem was invariably made 'a thing of beauty,' breathing strains of hope, not groans of gloom. Shall not our court-yards be in spirit so adorned? "In present times, a custom is to plant sweetly-smelling and cheerful-looking flowers before the house door: these may teach the lessons of older times, as told by Apollo and by Christian emblem—may show that where thrift and carefulness reign may shine a cheerful joy—and that thoughts only of the animal life, refusal to be joyous, constant care, are not required by *The Book* upon the table, that takes the place of the heathen god in the court-yard. Our deeper consolation, purer teaching, higher aims, than those of the darkened Greek, should show recognition in the evidence of grateful appreciation of the beauties found so lavishly around us: the added comforts and superior conveniences of our homes to those of our Christian forefathers should make us strive to emulate in our works the spirit which gives to those of our fathers a beauty and a use."

When we add, that no reference whatever is made to the source throughout Mr. Wheeler's volume, the justice of our complaint must be evident. This is not the first time the little book in question has been made use of by others, but this instance is certainly the most barefaced example.

Improved Dwelling-houses for the Humbler and other Classes, based on the Scottish Dwelling-house System. By William Chambers. London: W. and R. Chambers, Paternoster-row. 1855.

The substitution of the horizontal or flat system of building dwelling-houses for the ordinary perpendicular system, especially in London, we have often urged in these columns, so that the subject is not new to our readers. For more detailed particulars, however, as to the former system, than our limits allow us to give, we are glad to be now able to refer all interested, and particularly our professional readers, as well as capitalists, to the precise and clear conception of that system which a perusal of Mr. Chambers's tract will afford them. It contains much information as to the flat system as it is practised not only in Scotland but also in France, the adoption of which latter modification in London Mr. Chambers recommends,—at least so far as relates to the appendage of a porter or general attendant to look after the common stair, outer entrance, &c. of each of the higher class tenements of "houses" or flats; although in many cases the additional expense thus incurred may not be considered necessary, especially in the tenements of cheaper and smaller dwellings so much wanted about London. In respect to the endeavour to introduce the flat system in the metropolis, as at Victoria-street, Westminster, Mr. Chambers says:—

"In certain new tenements lately erected in Victoria-street, Westminster, an attempt has been made to introduce into England the plan of dwellings in flats; and there the common stairs are placed in charge of a porter or porteress, who opens the door to all visitors. With this commendable improvement, however, the plan of accumulating separate dwellings under one roof is not presented in a form which is likely to be popular. In one case, the intervention of *entre-sols*, and in another the erection of low parasitic buildings behind, as residences for the shopkeepers, are fatal objections. The very putting of shops in houses of this class, with no adjoining neighbourhood for their support, seems an error which it would be well for speculators to avoid. From whatever cause, the flats in question are charged with rents far beyond the means of those class of persons who might be expected to occupy dwellings of this kind. On lately making personal inquiry, I learned that for a first floor, raised to a great height by reason of an *entre-sol*, the yearly rent (rates and taxes included) was as much as 120*l.* For a second floor in another tenement, consisting of only three rooms and a kitchen, and possessing no accommodation whatever for a servant, the yearly charge was 90*l.* Possibly, other dwellings of this kind in or near Victoria-street may be cheaper, but the sums just specified at least indicate the general extravagance of the charges which are made; and after making all allowances for local circumstances, I am inclined to suppose that some great architectural or financial blunder has been committed by the parties concerned. The price of timber, glass, slates, locks, hinges, and some other materials, can be no greater in London than in Edinburgh; and as it may be imagined that any excess in the price of labour would be compensated by the low cost of brick in comparison with the heavy outlay for polished sandstone, one is at a loss to understand why, as regards mere construction, a substantial and commodious tenement on the Scottish plan could not be produced as cheaply in the environs of London as in Edinburgh or Glasgow. In examining the Victoria-street buildings, it may be noted that the floors are placed on iron beams and arches, as a precaution against fire—an arrangement shown to be unnecessary for properly built edifices of this kind, and by which, as well as from some other oddities, the cost of construction is possibly increased. Be this as it may, it is matter of regret that the attempt to introduce into London, buildings on the Scoto-Parisian plan, should not have afforded a more correct idea of the original; and it is only from observing this unfortunate failure, of what was no doubt a well-meant scheme, that we would venture to recommend a new course of procedure."

For this new course of procedure we must refer our readers to the tract itself, and its illustrations.

In allusion to a very much wanted class of dwellings,—those namely of 15*l.* to 20*l.* rental, Mr. Chambers says,—

"Advancing to a still better class of dwellings, much in request, we arrive at those which embrace two rooms, with a bed-closet, kitchen, scullery, water-closet, and other conveniences — rent, from 12*l.* to 16*l.* or what in London might be from 15*l.* to 20*l.* per annum. The best specimen of a tenement of this class which has come under my notice, is one lately erected, as a private speculation, by a gentleman at Port-Hopetoun, a suburb of Edinburgh. This large building, forming the corner of a street, consists of flats, reached by two common stairs. Each dwelling consists of a kitchen and two rooms, with closets of various sizes, a scullery, and other conveniences. The rents are from 12*l.* to 16*l.* each, making a money-return to the landlord of at least 7 per cent. per annum. The chief peculiarity of the structure is, that it is pierced from top to bottom by shafts, which afford light and air to the water-closets in the several dwellings. These shafts have a glass cupola, with louvre-boards for ventilation."

The author formally dedicates this useful tract to "Capitalists, architects, builders, and generally all who may feel interested in promoting the erection of improved dwelling-houses at a moderate rent in London, New York, and other large seats of population."

Miscellanea.

Cracks in Lead.—Upon a roofing of lead subject to the frequent tread of the foot, and exposed to the excessive heat of the sun, I wish to apply to certain damaged parts a composition which would be a preventive to the water oozing through the crevices at the time of rain, and would likewise remain hardened and adhesive under a summer sun. Soldering, from the springing of the lead by the frequent tread, cracks, and again exposes the crevices to rain. Gas-tar, mixed with a good proportion of rosin, and applied in a high state of heat, becomes again melted by the sun's heat. If any of the readers of your paper be in possession of an efficient remedy, and would name it in your columns, I should be much obliged.—G. S.

Loss of Antiquities for the French National Museum.—Letters from the East intimate that the greater part of the collection of antiquities made by M. Place and M. Fresnel, at Babylon, have been lost just above the confluence of the Euphrates and the Tigris. The advices state that they were several feet under the alluvial soil, into which they had sunk in four fathoms water. Mr. Holland, commanding the Hon. East Company's steam-ship *Comet*, repaired to the spot, sent down divers, and used every exertion to recover them, but without success. Of the whole of this magnificent collection only two rafts, containing fifteen sculptured figures, and one large bull, reached Bussorah in safety.

Sussex Memorial.—The first stone of a new wing to the Royal Free Hospital, London, to serve as a memorial of the late Duke of Sussex, was laid on Monday last, with Masonic honours.

A Singular Lightning Stroke at Birmingham.—If last season was remarkable from want of thunder-storms, the present is equally remarkable from their number and intensity. A strange incident occurred during the great thunder-storm which recently passed over Birmingham. The workmen employed on the Independent College, in course of erection on Moseley Common, near the Stratford-road, took shelter in a couple of wooden sheds, thirty or forty yards from the building, and from each other. One of these is used for the workmen's tools, and in it some thirty bricklayers took refuge. Separated from the tool-house by a wooden partition, is the builder's office, in which was Mr. Beeson, the clerk of the works. The other shed was occupied by twenty stonemasons. They were not many minutes sheltered when a lightning flash prostrated to the earth the whole party of fifty. A noise like the crack of a percussion cap (the well-known sound of the electric force in action), preceded the peal of thunder. Two or three minutes elapsed before any of the party were able to rise, and one, the foreman of the bricklayers, remained quite unconscious for upwards of a quarter of an hour. A sensation as of scalding led to the discovery that their bodies were more or less blistered, several being nearly covered with watery patches, varying in size from a hand's breath downwards. The stonemasons do not appear to have been visited so severely, as none of them were blistered. The lightning descended a scaffolding-pole at the corner of the building nearest the sheds, scooping out its substance, from top to bottom, as cleanly as if it had been the work of a gouge or chisel, burning the ropes by which four ranges of scaffolding were tied, and chipping a heap of bricks below as if with hammers.

British Archæological Association. — The programme for the meeting in the Isle of Wight, from August 20th to 25th inclusive, is as follows:—Monday.—Public Meeting in the Town-hall of Newport; President's Address; Introductory Sketch of the Antiquities of the Isle of Wight, by Mr. Pettigrew; Exhibition of Plans of the Town of Newport; Lecture on the Municipal Records of Newport, by Mr. W. H. Black; Inspection of the Town; Remains of St. Thomas's Church; the Grammar School; Museum of the Isle of Wight; Evening Meeting at Newport for Papers, &c. Tuesday.—Visit to Carisbrooke Castle; Remains of Priory; Carisbrooke Church; Shalfleet Church; Newtown; Site of Ancient Francheville; Examination of Ancient Documents; Evening Meeting; Papers. Wednesday.—Visit to Calbourne Church; Longstone; Mottistone; Brixton Church; supposed Site of Roman Villa; Westcourt; Manor House; Shorwell Church; Rowborough; Ancient British Town of Gallibury; Evening Meeting at Newport; Papers. Thursday.—Visit to Niton; Puckastor Port; Ventnor; St. Lawrence Church; Bonchurch; Examination of Barrows on Wroxall Downs; Evening Meeting; Papers. Friday. — Visit to Southampton; Reception in the Audit House; Examination of the Ancient Walls and Fortifications; St. Michael's Church, &c.; Lecture on the Corporation Documents, by Mr. Black; and on Saturday, closing Meeting and Visit to Netley Abbey.

Sharp Practice.—The "Country Architect's" paragraph headed "Sharp Practice," I did not at first think worthy of my notice. I will, however, for the sake of *truth*, just state what passed between the vicar and myself. The vicar is a personal friend of mine, having known him for upwards of twelve years. I called on him when in that part of the country, as I frequently do. I had no idea that it was his intention to build a cemetery chapel, until he named it to me, and asked me to make a design: no other architect's name was ever mentioned to me as having been applied to; and, in accordance with the vicar's wishes, I sent him a *pen-and-ink sketch*. The framed and glazed lithographs which are stated to have "accompanied" this "elaborately got-up design," were presented to the vicar twelve years ago, and out of compliment to me he had them framed and glazed.

A Town Architect.

Grimsby Docks.—These docks, and the railway in connection with them, are prospering. During the past half-year the local goods traffic on the railway increased 23,746 tons, and the foreign goods traffic 31,728 tons. The coal traffic increased 15,402 tons. The shipping shows an increase of tonnage amounting to 2,715. The directors have modified the wharfage charges for coastwise timber and grain. The construction of a graving dock, corn warehouse, and additional conveniences for the shipment of timber and coal has been contracted for at 26,817*l*.

Stone for Doncaster Church. — The new building is rapidly progressing under the direction of Mr. Scott. It is supposed, nevertheless, that it will yet require more than two years to complete it. It was commenced with a stone called Steetby, but the architect, we are informed, has now adopted the Ancaster stone from the quarries belonging to Mr. John Wilson, which supplied the material for many of the ancient churches in Lincolnshire. We gave particulars of these quarries, it may be remembered, some time ago.

English Patents.—The *Mechanics' Magazine* of 7th ult. contains an account of Mellish's patent obliquely perforated glass ventilators, which, in their most recent and improved form, consist simply in cutting any approved pattern on the opposite sides (upper and lower edges) of a series of strips of glass, which being brought together, form a window-pane impervious to rain or direct currents of air, but constituting, it is said, an efficient ventilator. Under the head of specifications of patents recently filed, in the number of the same journal for 28th ult. is the following:—"Arnold, Joseph, of Tamworth, Stafford. A new mode of ornamenting bricks, and other moulded articles for building purposes. Patent dated Jan. 2, 1855. (No. 9.) In order to mould bricks with ornamental surfaces, the inventor cuts or engraves a die representing the required design, and applies this die as the side of the mould in which the moulded article is to be formed. This die is not permanently fixed to the mould, but is applied in such manner as to be capable of being readily removed." Provisional protection has been granted to George Antoine Tabourin, of Lyons, France, student, for a new system of metallic arch, proper for the construction of bridges, arcades, vaults, roofs, and all other such purposes; and to Charles Hide, of Worthing, Sussex, for improvements in connecting earthenware pipes or tubes. A patent has been applied for, with complete specifications by William Pidding, of Putney, Surrey, for improvements in the manufacture of building materials.

Machines exhibited at Carlisle.—A new brick machine, Boydell's steam-horse, and various reaping machines, were exhibited in action at the late meeting of the Royal Agricultural Society at Carlisle. The brick machine was exhibited by Messrs. Porter, Hinde, and Porter, of Carlisle. At the first trial it did not come up to the mark, but it afterwards, according to the newspaper reports, threw off 18,000 well-formed bricks in an hour. The machine effects the two processes of pugging and moulding the clay almost simultaneously. The bricks are cut in the direction of their bed, so that the four sides are preserved smooth, while the top and bottom are slightly roughened, so as, with the perforation of the centre, to secure the proper adhesion of the mortar and consequent safety of the building. The steam-horse is said to have made a successful *début*, notwithstanding some reports to the contrary. Having been put to many tests, it was fixed to a digging machine made by Gibson, of Newcastle-on-Tyne. This implement consists of a series of long hook-shaped prongs, which revolve on a common centre; the prongs striking into the soil by the weight of the machine, and tearing up the ground as the instrument advances. Great power is said to be required for the motion of this implement, so that it put the steam-horse to a severe test, which, nevertheless, it encountered and overcame. The competing reaping machines were Bell's, with Croskill's improvements; Lord Kinnaird's, manufactured by Barry and Leigh; Hussey's Improved, by Dray; M'Cormick's, by Burgess and Key; Palmer's (Stockton); and one by Harker (on the principle of Smith, of Deanston). Most of them are reported to have done their duty smoothly and well, although some minor improvements were desiderated. The prospects of mechanical aid in agriculture appear to be very promising. We may here add that a new steam-plough and harrow, to be worked together, have been made by Mr. R. Rogers, of Westrow Foundry, Stockton. The construction is described as being simple, and with an engine of four-horse power, it can cultivate four acres of land a day, it is said, to any depth required. A patent has been secured for it by Mr. Fiskin, the inventor, and the Highland Society has awarded to it a sum of money, and sent a deputation to witness its operations, who have expressed themselves satisfied that its powers might be applied to agriculture with advantage.

Railway Matters.—A general meeting of the Grand Trunk of Canada Company was held on Tuesday week, at the London Tavern. The report of the directors stated that the progress and execution of all the works had been in the highest degree satisfactory, and that the sections of the line from Quebec to St. Thomas (40 miles), and from Montreal to Brockville (125 miles), will be delivered over to the company for traffic in the ensuing autumn. The communication between Brockville and Toronto (210 miles) will be completed next year; the section from Toronto to Stratford (82 miles), before the end of this year. A connection will thus be effected between Stratford and Montreal, and between Montreal, Portland, and Quebec (841 miles), except the Victoria-bridge. An arrangement with the contractors, Messrs. Peto, Brassey, Betts, and Jackson, had been come to, under which it was expected a more economical plan for the construction of Victoria-bridge might be effected. In reply to questions, it was stated that the Victoria-bridge had already cost 200,000*l*. and that 60,000*l*. more would be required before they could stop the works with a view to give time to consider whether a cheaper mode of construction could be adopted. Half-yearly reports would in future be given. The report was unanimously adopted.——On Tuesday week instructions were forwarded to Messrs. Peto, Brassey, and Betts, from the War Office, requesting them to take the necessary steps for hiring a steam vessel to convey to the Crimea 130 railway waggons, 40 drivers, ten shoeing smiths, and a supply of iron for shoes. The North of Europe Steam Navigation Company's steam ship *Leipzic*, of 700 tons burden and 250 horse-power, was engaged for the voyage, and on Saturday thereafter was at Blackwall, with all her berths ready and her coals on board. The work of loading commenced immediately, and by this date she sails.——Messrs. Wright and Son, of Saltley, have just completed a railway carriage for the Pasha of Egypt, intended for the line between Cairo and Alexandria, which is ultimately, it is said, to be carried across the desert. The interior is divided into three compartments—the centre for the Pasha and attendants, the second for his private use, splendidly fitted up, and the third for his servants.

The Edinburgh Fine-Arts Association.—The twenty-first annual meeting of the Royal Association for the Promotion of the Fine Arts in Scotland, called for the drawing of prizes and reception of the directors' report, took place on Saturday before last, in Queen-street Hall. The prize paintings were exhibited from a screen behind the platform. There was a numerous and fashionable attendance. The chair was occupied by Lord Neaves, who addressed the meeting. The report congratulated the subscribers on the prosperous aspect of their affairs. The annual fund of the Association for the year 1854-55 had exceeded that of last year by 100 guineas, and was larger than that of any year since 1840. The sum was 4,264*l*. From the late exhibition of the Royal Scottish Academy the committee had selected forty-four works of art, at a cost of 1,687*l*. The committee had given 400*l*. for the picture of the "Porteous Mob," by James Drummond; and for five pictures by George Harvey, D. O. Hill, Edmund Crawford, Samuel Bough, and R. T. Ross, a sum of 565*l*. Other details were entered into, and the committee further mentioned that, in March last, a memorial was addressed to them, on the part of the Government, applying for the temporary loan of one of their pictures in the National Gallery, for exhibition at Paris, namely, "The Quarrel of Oberon and Titania," by Noel Paton, a request which was at once acceded to by the committee.

The Metropolitan Buildings Bill has been read a third time, and passed the Commons.

The Chester City Surveyorship.—The local improvement committee, according to the *Chester Chronicle*, have resolved to recommend the council not to fill up the vacancy in the office of city surveyor—at all events, for the present. "It is suggested," adds our authority, "that the preferable plan would be to engage a person at the rate of 100*l*. a year to superintend the works that may be going on, and that there will be no difficulty in finding one competent at that salary. Almost all the important works that are contemplated are in that state of forwardness, as regards plans, specifications, and estimates, that the services of a regular surveyor are no longer required, and an individual of sufficient mechanical skill is all that is required. The situation is now more that of a clerk of the works than a surveyorship in the sense the latter office carries. It is hardly possible for 150*l*. *per annum* to secure the undivided services of a surveyor; and, if the present system were continued, it would be necessary that heavy security should be required. The best plan, it is urged, would be to obtain the assistance of a special engineer or surveyor when and as occasions arise for extra services of the kind, and to pay for them *pro re nata*."

Stained Glass Window for Branksea Castle.—A stained window for the banqueting-room of Branksea Castle, on Branksea Island, Poole harbour, the residence of Colonel Waugh, the owner of the island, is being completed by Messrs. E. Baillie and Co. of London, the exhibitors in the Crystal Palace, Hyde-park, of the glass painting, "Shakspeare Reading a Play to Queen Elizabeth." The colonel has built and endowed a church on this island, employing Messrs. Baillie to decorate the windows. The subject of the castle window is dictated partly by the consideration that Mrs. Waugh is lineally descended from Sir Walter Raleigh.

St. Bartholomew the Great, Smithfield.—A meeting has been held, to set on foot a subscription for the restoration of this church. It is one of the most ancient in London, and it is hoped that the authorities and ancient guilds of the city, as well as private individuals, will contribute handsomely towards the preservation of this interesting edifice, which is quite beyond the means of so poor a district to repair in the manner it deserves.

A Free Church and Schools for Pentonville.—At a public meeting of the inhabitants of the new parish of St. James, Pentonville, recently held, resolutions were adopted to the effect, that there being but church accommodation for 600 out of a population of 12,000, an additional church is required which should be perfectly free; and that an additional school was needed for children of the poor, education free. A committee was appointed to carry out the object in view. It is proposed, in the first instance, to provide a temporary edifice constructed of iron, and capable of accommodating 1,000 persons, to be used for divine worship, and also for a school. The funds required are to be raised by voluntary contributions.

Architectural Notes.—In Committee of Supply on Tuesday last, the Commons voted, amongst many other items, 17,695*l.* for National Gallery expenses, including purchase of pictures; 25,000*l.* for Chelsea embankment and roadway; 4,578*l.* for the British Embassy houses at Constantinople and Therapia; 1,550*l.* for the erection of Courts of Law, in the Isle of Man, and 9,000*l.* for the general repository for public records; 90,000*l.* for a site, and erection thereon of new offices for the Foreign Secretary (various objections to the plans have been started, we do not yet know with what reason or justice); 5,000*l.* towards completion of the Galleries of Art at Edinburgh; 40,000*l.* to defray the cost of public works, and for educational and other purposes, in South Africa; 5,000*l.* for the piece of ground required (as we have often urged) for opening up a continuation of Pall-Mall to the Green-park; and 11,000*l.* for the purchase of the remaining term of the Crown lease of Buckingham House, Pall-Mall.

The Conservative Land Society.—The twenty-first purchase for distribution amongst the members has just been made at Clapton. The estate belonged to the late Mr. Samuel Berger, and consists of a family residence, with pleasure-grounds, gardens, &c. This property is in the parish of St. John, Hackney, and is close to the church, and the station of the North London Railway.

Sanitary Observance in Ancient Egypt.—A French chemist, M. Fontenelle, in a discourse on opening an Egyptian mummy, at the Sorbonne, Paris, expressed his belief that the Egyptians were led to embalm their dead from sanitary motives. During four months of every year the inundations of the Nile cover almost entirely the surface of Egypt which is under cultivation. Under the reign of Sesostris, for an extent of territory of about 2,250 square leagues, according to D'Anville, there would be a population of 6,222 persons per square league, which would present 350,000 deaths per annum. These corpses required to be got rid of either by burning or by interment: if the latter, they must have been buried around the inhabited spots, or in those inundated, and then the decomposition would have been a source of destruction: for burning there was an insufficiency of wood. But the soil of Egypt abounds in springs of natron (subcarbonate of soda), and as this substance is antiseptic, the inhabitants were naturally led to preserve with it the corpses of the dead. In support of the opinion that sanitary views were the cause of embalment down to the third century before the Christian era, when the practice was abandoned, M. Fontenelle observed that during the whole of that period the plague was unknown in Egypt, where it is now endemic.

Scaffolding.—While reading your paper yesterday, and *apropos* of nothing, it occurred to me that it would be much better every way if builders used permanent scaffolds, moveable on wheels, in fact a sort of car, instead of the present ugly and dangerous contrivances used in house building. I think if they did we should not have to hear of so many calamities as we do in connection with bricks and mortar.

Non-Professional.

Stone-cutting Machine.—The *Arbroath Guide* mentions a new stone-cutting machine, a recent invention of Messrs. James Hunter and Sons, of Leysmill, near that place, in full operation at the pavement quarries there, belonging to W. F. Lindsay Carnegie, esq. of Kinblethmont. "In the course of ten minutes," says our authority, "we saw a stone of 16 feet 8 inches, and another of 15 feet 2 inches, completely and mathematically divided by a revolving plate-iron wheel, to which are attached steel-cutters of a rounded, bell-mouthed form, apparently of no formidable description, and which can be taken off or put on with the greatest celerity. The speed of the machine is about 7 inches forward per minute for fair working stone of any breadth. The rapidity of the work is only equalled by the extraordinary noiselessness of the machine, as persons standing close by can let themselves be heard without any effort. Two men are only required to be in attendance, their principal work being the adjusting of the stone operated upon, the taking of it away—very easy processes—and the looking out for another. The stones which were subjected to the cutting process on this occasion were of the solid rock and unlaminated description and old sandstone formation. Thus, a description of stone which was previously not available for pavement purposes has been rendered so by the action of this novel and ingenious machine."

Precision in Speech and Writing requisite.—We have heard of a shipowner, not very accurate either as a speller or a writer, who required one of his skippers to bring him home from Africa "two" monkeys, and had afterwards reason to thank his own autographic "too," or rather "1oo," as well as the zealous exertions of his "keptin," for the conversion of his ship into a splendid menagerie, containing a hundred gibbering *simiæ*. In this instance, "word of mouth" would have been preferable to written request. In another instance, which we have here more particularly to note, the written request would have been decidedly preferable to the verbal. At Plymouth there is a wall, adjoining the military prisons, and belonging to Government, which impedes the traffic on the Milbay-road. This wall it was very desirable to remove, and with concurrence of the corporation, the mayor, who happened to visit headquarters, asked Mr. Phinn, late recorder of Devonport, the Admiralty Secretary, if he thought there could be any objection to the wall in question being *razed*. Mr. Phinn replied that he saw no reason why it might not be *raised*, and accordingly procured the requisite authority to this end; and, while the corporation were congratulating themselves on the removal of the obstacle, and thanking the mayor for his successful effort to that effect, their astonishment may be conceived when they learned that a number of masons were busily engaged in raising the wall in accordance with the mayor's supposed request. The consequence is, that a written memorial has been forwarded to the Admiralty, praying that the wall may not be raised, but razed. In a case such as this, it is very desirable that the latter word should be *uniformly* pronounced in "*a* flat," leaving "*a* sharp" exclusively to the former, and so obviating all chance (a serious one at times it might be) of misunderstanding.

Boot and Shoe Cleaners.—Why should we not have boot and shoe cleaners on the plan of the knife cleaners? They should be worked with a treadle like a lathe, which should drive a cylindrical brush, one half of it a rough brush for removing dirt, and the other half a polishing brush. For hotels, schools, and other establishments, needing much boot and shoe cleaning, they would save time, labour, and cost.—N. R.

The "Holy Trinity," Upper Tooting.—The builder of this church was Mr. Samuel Nowell—not Mr. Jay, as first stated.

Coating Iron with Copper.—Mr. Johnson (for a correspondent) has patented an improved system of coating iron with copper, in carrying out which, the iron is thoroughly cleansed by the action of dilute sulphuric acid, and a lye of caustic soda. It must then be plunged into a first bath, by which means a thin coat of copper is deposited, and the iron is thereby protected against the action of the acid in a second bath, by which the deposition is completed, this latter bath consisting of sulphate of copper, rendered strongly acid by the addition of sulphuric acid. A thin coating of lead may be substituted for the first coating of copper.

Repair of St. Mary's, Islington.—We mentioned the endeavours that were being made to raise money to put the mother church into a proper state. The following tenders show the different views contractors take as to cost:—

Longmire and Burge	£1,666 0 0
Dove	963 0 0
Patrick and Sons	944 10 0
Timewell	891 10 0
I'Anson	847 0 0
Haynes and Eyre	804 0 0
Glenn	699 0 0
Taylor	594 18 0

Improvements in Propelling Vessels.—Mr. C. De Bergue, of Dowgate-hill, has recently secured a patent for a new propeller. It consists of a rectangular box, open at both ends, fixed laterally on the sides of the vessel, in the place of the ordinary paddle-box, but completely under water. A disc of iron, or other metal fits closely into this box, and is coupled to the crank on the main shaft of the engine by a connecting-rod. This disc acts as a plunger, and when in action the end toward the bows first reaches the bottom of the box: the hinder end then coming down rapidly, ejecting the water sternwards with great force, somewhat on the principle of the common bellows, propels the vessel forwards. Working under water, it is out of reach of gun-shot, and is therefore as safe in that respect as the screw.

Ottery Church.—I am much surprised never to have seen in print a proper account or engraving of the fine old church of Ottery, in Devonshire, which is justly deserving of the notice of architects, both from the grandeur of its appearance and peculiarity of plan (being apparently built on the fine model of Exeter Cathedral), and also from its exhibiting a specimen of a vaulted stone roof, unsupported by any kind of buttress above the height of the side aisles. But the point to which I particularly wish to call attention, is the extreme boldness of the operation to which this building must have been subjected at the time when the beautiful additional side aisle, covered by a vault of fan-tracery, was added. In order to connect the new aisle with the aisle of nave (it is equal in width to the nave), the whole of the walls, originally supporting the vaulted roof of the nave on the north side, have been removed, and four rather slender pillars or piers substituted. The intricacy of effect produced by this succession of pillars and arches appears to me very beautiful, and certainly the architectural skill that could venture on carrying out so ticklish an interference with the main supports of a massy building, appears worthy of all admiration. A vast sum has lately been laid out on this church, and fine painted glass has been inserted in such profusion as to darken the interior to a most inconvenient degree.—A. B.

TENDERS

For two chapels, lodge and offices, and entrance gates, to the Bridport Cemetery. Mr. H. Hall, architect:—

Patten (Bridport)	£1,300 10 0
Harris (Sherborne)	1,239 7 0
Gerrard (Bridport)	1,154 10 0

For building chambers, Nos. 11, 15, and 16, Clement's-inn. Quantities supplied by Mr. Elliott:—

Lawrence	£3,717 0 0
J. and C. W. Todd	3,500 0 0
Williams	3,366 0 0
Macey	3,343 0 0
Fish	3,295 0 0
White	3,270 0 0
Bennett and Co.	3,248 0 0
S. S. Wilson	3,226 0 0
Rudkin	2,956 0 0

For the enlargement and repair of house, at the corner of Hanover-square, London, and Hanover-street (formerly the Hanover Hotel), for Mr. John Leslie. Mr. Godwin, architect. Quantities not furnished:—

E. O. Symons	£3,234 0 0
John Phillips	2,800 0 0
Bywaters and Sons	2,694 0 0
Delay (accepted)	2,399 0 0

For new Congregational Chapel, Canonbury. Messrs. G. W. and E. Habershon, architects:—

Callow	£5,400 0 0
Piper and Son	4,280 0 0
Bottomley	4,238 0 0
Batterbury	4,039 0 0
Cooper, H. W.	3,893 0 0
Myers	3,844 0 0
Higgs and Cullingford	3,787 0 0
Willson	3,782 0 0
Tolley	3,747 0 0
Dove	3,735 0 0
Higgs, Wm.	3,728 0 0
Rowland and Evans	3,448 0 0

For Welch Chapel, Nassau-street, Soho-square. R. H. Moore, architect. Quantities supplied by Mr. Charles Poland:—

Batterbury	£2,290 0 0
Rowland and Evans	2,228 0 0
Myers	2,200 0 0
Higgs and Cullingford	2,193 0 0
Macey	2,122 0 0
Dove, Brothers	2,095 0 0
Wilson	1,964 0 0
Bennett and Holdsworth	1,940 0 0
Richards	1,840 0 0
Searle	1,790 0 0
Hopkins and Roberts	1,696 0 0

For sewers, Queen's-road East, &c. Chelsea, for the Metropolitan Commissioners of Sewers. Engineer's estimate, 1,530*l.* 12*s.*:—

Batterbury	£1,744 0 0
Phillips	1,699 0 0
Yeoman	1,563 0 0
J. and E. Bird	1,530 0 0
Stamforth	1,520 0 0
Hall	1,458 0 0
Gooderson	1,410 0 0
Lee and Lavers	1,359 0 0
J. and C. W. Todd	1,297 0 0
Thirst	1,289 0 0
W. H. Rowe (accepted)	1,269 0 0